

Charlotte Maekelberghe

**The Present-day English Gerund System**

# **Trends in Linguistics Studies and Monographs**

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# **Volume 343**

Charlotte Maekelberghe

# **The Present-day English Gerund System**

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A Cognitive-Constructionist Account

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## Part I: Preliminaries



# 1 Introduction

This study is concerned with the Present-day English use of gerunds, nominal (as in [1]) and verbal (as in [2]). Although both gerund types have the external distribution of noun phrases, they are formally quite distinct. While verbal gerunds have a clausal internal syntax, taking adverbial modification and realizing their participants clausally, nominal gerunds have the formal properties of a noun phrase and thus allow for determination and adjectival modification. Despite the fact that nominal and verbal gerunds are historically related, with verbal gerunds developing out of nominal gerunds around the Middle English period, little is known about the relation between both gerund types in Present-day English. By assuming a multifunctional and quantitatively-oriented perspective, this study aims to map out the functional profiles (or usage profiles) of nominal and verbal gerunds. Establishing their functional niches allows us to pinpoint the distinctions between both constructions, while areas of functional overlap can provide new insights into the variation between nominal and verbal gerunds.

- (1) What we didn't know was whether he would be able to tolerate *the day-to-day playing of baseball*. (COCA)
- (2) The degree of risk and confrontation will be reduced by *sharing information amongst employees as fully and regularly as possible*. (BNC)

Synchronic studies of the English gerund have tended to focus on only one gerund type – typically the verbal gerund – as a result of which a systematic synchronic comparison of both gerund types is lacking. Yet, nominal and verbal gerunds offer a unique window on the functional cline between nominals and clauses and on processes of nominalization and verbalization. In addition to unravelling the specificities of nominal and verbal gerunds, the analysis of gerunds can therefore also contribute to our understanding of the categorial distinction between nouns and verbs/clauses, and shifts from one category to the other.

One of the major challenges involved in the study of gerunds is to develop a descriptive model that makes detailed comparison of their various functional properties possible. Prevailing analyses of English gerunds have tended to focus exclusively on their formal peculiarities (see, amongst others, Chomsky 1970; Fraser 1970; Pullum 1991; Yoon 1996; Malouf 2000) and those that do assume a more functional perspective are often limited to one particular dimension (e.g. Schachter [1976] and Heyvaert [2008] on reference and Brinton [1998] on aspect). By unifying and operationalizing a number of concepts that have figured in

cognitive-functional approaches towards syntactic categories in general and nominalization specifically, I will map out a *multifunctional* framework that allows for a detailed functional description of the gerund system. Furthermore, this study wishes to examine potential variation between nominal and verbal gerunds at different levels of abstraction. In order to do so, I will also incorporate insights from Construction Grammar. More specifically, the constructionist framework allows for a more detailed description of lexical constraints on variation between nominal and verbal gerunds on the one hand, and an interpretation of these constraints in terms of paradigmatic relations in the constructional network on the other.

This work is also set off against previous synchronic studies *methodologically*, viz. through its use of corpus data and quantitative methodologies. A corpus-based approach not only makes a more comprehensive assessment of the gerund system, which also comprises infrequent and hence underresearched constructions, possible; it also improves our understanding of the actual usage of nominal and verbal gerunds. By introducing a number of methodological innovations into the study of Present-day English gerunds, I wish to address some of the lacunae that still remain in current research. While a collocational analysis can offer more insight into the variation between nominal and verbal gerunds on token-level, statistical techniques such as hierarchical clustering and regression analysis present quantitative models of gradience and variation within the gerund system itself.

The combination of a multifunctional and quantitative, variationist perspective paves the way for a semantic description of nominal and verbal gerunds that is both richer and more nuanced at the same time. By viewing the semantics of gerund constructions as resulting from a complex interplay of interrelated factors and by studying these factors at token-level, I aim to overcome the often simplistic and binary approaches towards the meaning of gerunds that have long dominated the literature. Through quantitative analysis, the usage profiles of nominal and verbal gerunds can be more accurately depicted in terms of probabilistic trends rather than by means of categorical labels.

The study of gerunds, finally, also bears relevance to that of more general processes of nominalization and verbalization. Because they display nominal and clausal traits to different extents, nominal and verbal gerunds have been situated on a gradient cline of “nouniness”, which has primarily been defined in structural terms (Ross 1973; Aarts 2007). A better understanding of the semantics of both constructions, however, can yield valuable insights into gradience as a functional phenomenon. Likewise, while many studies focus on the order in which morphosyntactic features are lost and gained in nominalization processes (see, amongst others, Lehmann 1988; Malchukov 2004), little is known about the functional properties that are most readily acquired or lost. Statistical approaches such as regression analysis quantify the relative importance of each

functional parameter, which allows us to assess the prevalence of functional dimensions in nominalization.

This study consists of three major parts: Part I, which introduces the topic of Present-day English gerunds and the data that were used for the analyses; Part II, which presents the results of the multifunctional analysis; and Part III, which examines potential variation between nominal and verbal gerunds. In Chapter 2, I provide a brief overview of the literature on gerunds. It is shown in this chapter that, although English gerunds are well-studied, the bulk of the existing studies focuses on the lexicogrammatical status of the verbal gerund and its relation to participial and infinitival constructions. Studies that explicitly contrast nominal and verbal gerunds and integrate formal and functional features are scarce. Chapter 3 then reports on the corpora and datasets that were used in this study.

The multifunctional analysis of nominal and verbal gerunds is the focus of Part II. In this part, the functional concepts that were introduced in Chapter 2 are first fleshed out in more detail to make them suitable for the comparison of nominal and verbal gerunds. The subsequent analyses are then mainly aimed at identifying the functional niche of each gerund type, uncovering a functional cline of “nouniness” in the gerund system.

Chapter 4 zooms in on the notion of reference, i.e. the mapping between a linguistic element and an entity in the real world or the discourse world (Givón 2001: 438). Referentiality, being closely associated with noun phrases, is typically viewed as one of the main functional motivations behind processes of nominalization (Langacker 1987a; Croft 1991, 2001; Malchukov 2004). It is argued, however, that current referential models, because they have been modelled on prototypical noun phrases, fail to adequately capture more fine-grained distinctions between nominal and verbal gerunds. Chapter 4 therefore presents a multi-layered account of referentiality which attempts to draw a clearer line between concepts of definiteness and specificity on the one hand, and which incorporates the role of mental spaces in establishing reference, on the other. As will be shown, the representational semantics of nominal and verbal gerunds can best be described in terms of the different ways in which they engage with each layer of the referential model.

Chapter 5 turns to the aspectual semantics of gerunds, or the way in which they conceptualize a situation as unfolding over time. Over the years, many aspectual labels have been attributed to both nominal and verbal gerunds, and to the *-ing* suffix in general. Most of these aspectual claims, however, are formulated in very general terms, and they are rarely based on authentic corpus data. In the analysis that I set out in Chapter 5, the gerund’s participants and the broader lexicogrammatical context constitute an integral part of the gerund’s aspectual semantics.

The analyses presented in Chapters 4 and 5 provide the backbone for the following chapters. Chapter 6 integrates the referential and aspectual framework into a case study of the indefinite nominal gerund (e.g. *a sharing of ideas*). It shows how a detailed, multifunctional analysis of this underresearched nominal gerund type can motivate the at first sight unusual occurrence of uncount nominal gerunds with an indefinite article.

Part III of the study is concerned with a more variationist perspective on Present-day English gerunds. Chapter 7 studies how contextual and collocational preferences constrain variation between nominal and verbal gerunds on token-level, and how these constraints reflect their respective functional profiles. The statistical techniques employed in Chapter 8, then, incorporate the functional parameters into models that quantify gradience and variation within the gerund system, helping us to discern zones of functional overlap between both gerund types as well as areas where free variation between them is highly unlikely.

The results obtained from the analyses in Parts II and III are then synthesized into a holistic semantic account of nominal and verbal gerunds in Chapter 9. The abstract, conceptualist semantic profiles of nominal and verbal gerunds are shown to be manifested both on token-level, where they affect the gerund's collocational patternings, as well as on an intermediate level, where they can help us understand gradience and variation between clusters of nominal and verbal gerunds. These lower-level observations, in their turn, are shown to feed into our theoretical understanding of nominalization and verbalization processes.



## 2 The gerund

The gerund is arguably one of the most intriguing and, unsurprisingly, also one of the most studied phenomena of English grammar. Rather than providing an exhaustive overview of the numerous studies that have been carried out on the topic of gerunds, this chapter wishes to provide some necessary background to the analyses that will be carried out in the following chapters. More specifically, Section 2.1 will briefly zoom in on synchronic studies that have focused on either the form or the functioning of English gerunds and which will be of relevance to the research undertaken in this study. Section 2.2 provides a general discussion of the linguistic phenomenon of nominalization while touching on the intriguing historical development of verbal gerunds, which, from a diachronic perspective, are instances of verbalization rather than nominalization. The section also discusses a number of studies that have proposed hierarchies of (mainly formal) verbal and nominal features involved in the process of nominalization. In Section 2.3, I present the theoretical underpinnings of this study. The analyses in the following chapters will on the one hand draw heavily on the conceptual features of linguistic categories that have been proposed within the framework of Cognitive Grammar and functional linguistics. On the other hand, in order to model relations within the gerund system, I will rely on some of the basic tenets of Construction Grammar. I will conclude this chapter with a synthesis of the prevailing analyses of gerunds and nominalizations and an outline of the goals of this study.

### 2.1 Synchronic approaches to the English gerund

#### 2.1.1 Form

Apart from the more recent terms “nominal” and “verbal gerund” (see, for instance, Alexiadou 2001; Fanego 2004; De Smet 2007; Fonteyn 2019), a number of other labels have figured in the extensive literature on gerunds. Many studies reserve the term “gerund” or “gerundive nominal” for verbal gerunds (Lees 1960; Chomsky 1970; Fraser 1970; also see Pullum’s 1991 and Yoon’s 1996 use of the slightly confusing term “nominal gerund phrase” for verbal gerunds), the nominal gerund being labelled as a “mixed form” (Chomsky 1970), “action nominalization” (Lees 1960; Fraser 1970; Newmeyer 1970; Ross 1973; Comrie 1976; Schachter 1976) or merely a “verbal noun” (Quirk et al. 1985: 1290–1292). Huddleston and Pullum (2002: 82) use the term “gerundial noun” for nominal gerunds, but group together

gerunds and participles under the compound term “gerund-participle”, while Biber et al. (1999: 67) use the general term “*ing*-form” for both gerund types.

Most studies discard the nominal gerund entirely and focus instead on the peculiar lexicogrammatical status of the verbal gerund (Horn 1975; Schachter 1976; Baker 1985; Abney 1987; Milsark 1988; Pullum 1991; Yoon 1996; Malouf 2000; Hudson 2007; Heyvaert 2008). Indeed, the verbal gerund’s combination of nominal and clausal features has presented a challenge to many syntacticians. Early generative studies propose a “two-node” analysis of verbal gerunds, involving a verbal node that is subordinate to a nominal node, which entails that the gerund consists of a verb phrase within a noun phrase (Chomsky 1970; Baker 1985; Abney 1987; Pullum 1991; see Malouf 2000 and Hudson 2007: 188–189 for an overview). Other accounts present a “single-node” analysis, which argues that verbal gerunds have a single node which has inherited both nominal and verbal characteristics (Malouf 2000; Hudson 2007: Ch. 4). As such, verbal gerunds are analyzed as being “both verbs and nouns”. Yet, Hudson argues that “the characteristics of verbs and nouns never conflict, because nominal features always control external distribution but verbal features never do, whereas the reverse is true of internal structure” (Hudson 2007: 187). In Heyvaert (2008), it is suggested that the nominalization of verbal gerunds involves “rankshift”, i.e. “the shift of a clausal configuration of functions – with its internal clause-like structure intact – from clausal to nominal rank” (Heyvaert 2008: 53, also see Halliday 1966). While this analysis at first sight seems similar to the two-node analyses mentioned above, Heyvaert, following Schachter (1976), argues that downranking does not restrict itself to the external nominal functioning of the gerund, and that verbal gerunds also fit in with the nominal paradigm internally (2008: 54). This is especially relevant in the case of verbal gerunds with a possessive subject, the function of which has been likened to that of a possessive or genitive determiner with ordinary noun phrases (Heyvaert 2008: 68; Hudson 2007: 203). As pointed out by Pullum (1991), however, the possessive with verbal gerunds does not entirely match with the possessive’s prototypical use with noun phrases. It cannot, for instance, be used elliptically (also see De Smet 2010: 1168–1169):

- (3) a. I was amazed at Stacy’s eagerness, and at Morgan’s too.
  - b. \*I was amazed at Stacy’s being so eager, and at Morgan’s too.
- (Pullum 1991: 770)

Pullum therefore labels the possessive with verbal gerunds as a “subjectoid”, i.e. a hybrid form that is situated somewhere between the nominal category of determiner and the clausal category of subject (De Smet 2010: 1168). The hybrid nature of verbal gerunds will be discussed in more detail in Chapter 4, where I will

present my own account of the degree to which verbal gerunds fit in with the nominal paradigm. By means of a referential analysis, it will be argued that verbal gerunds do not entirely follow the nominal paradigm, as argued by Heyvaert and Schachter. Rather, verbal gerunds have lost certain typical features of nominal reference, such as the ability to express definiteness in the same way as nominal gerunds do, and have instead acquired more clausal means of establishing reference. At the same time, the verbal gerund's nominal features do not just control its external distribution, as argued by Hudson. Indeed, in some cases, verbal gerunds are shown to behave like regular uncount abstract nouns.

The nominal gerund, being unambiguously nominal both externally and internally, has received less attention in the literature. Its syntactic make-up has mainly been considered in comparison to that of other forms in the so-called “nouniness squish”, a quasi-continuous hierarchy presented by Ross (1973) and adapted by, amongst others, Quirk et al. (1985), Mackenzie (1996) and Aarts (2007). The nouniness squish brings together a number of expressions that range from fully verbal to prototypically nominal, with gerund forms typically being situated somewhere in between. Example (4) illustrates the original hierarchy as it was presented in Ross (1973):

- (4) a. *That-clause: that Max gave the letters to Frieda*  
 b. *For to: for Max to have given the letters to Frieda*  
 c. *Embedded question: how willingly Max gave the letters to Frieda*  
 d. *Acc Ing: Max giving the letters to Frieda*  
 e. *Poss Ing: Max's giving the letters to Frieda*  
 f. *Action nominal: Max's/the giving of the letters to Frieda*  
 g. *Derived nominal: Max's/the gift of the letters to Frieda*  
 h. *Noun: spatula*

The majority of studies that address the form of nominal gerunds compare it to that of the verbal gerund, or in most cases, to other derived nominals, such as the noun *gift* in example (4g) (see, for instance, Lees 1960; Vendler 1967; Fraser 1970; Grimshaw 1992; Koptjevskaja-Tamm 1993; Mackenzie 1996; Harley and Noyer 1998; Alexiadou 2001; Alexiadou et al. 2013).<sup>1</sup> Harley and Noyer (1998) place nominal gerunds on the same level as other derived nominals, claiming that the *-ing* suffix is only inserted when no other derivational alternate exists, or

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<sup>1</sup> Although most comparisons involve Romance derived nouns in *-age*, *-al*, *-ance*, *-ion* and *-ment* or zero derivations, it should be noted that lexicalized *-ing* forms, such as *painting* or *meaning*, constitute another type of derived noun that behaves differently from nominal gerunds on a formal and functional level. These forms will be discussed in Chapter 6.

when the other nominalization has acquired a specialized meaning. This is the case in example (5), where the noun *mixture* denotes the resulting substance while the nominal gerund *mixing* refers to the activity of mixing:

- (5) a. *Belushi's lethal mixture of drugs and alcohol* proved fatal when he drank it.  
 b. *Belushi's foolish mixing of drugs and alcohol* proved fatal.  
 (Harley and Noyer 1998: 8)

When differences between nominal gerunds and derived nouns are described, most attention is devoted to argument structure and countability. Grimshaw (1992), for instance, posits a distinction between process nominals and result nominals which is argued to correspond to a more general distinction between nominalizations with and without argument structure. In example (6a), the noun *assignment* refers to the result of *assigning* and, consequently, does not require the presence of arguments. According to Grimshaw, Latinate word formations are ambiguous between a process and result meaning, while nominal gerunds, as in (6b), always behave like process nominals and thus take obligatory arguments. They moreover do not allow for pluralization and indefinite articles, which is argued to reflect the nominal gerund's mass noun status.

- (6) a. The (\*constant) assignment is to be avoided. (Grimshaw 1992: 50)  
 b. \*A/one/that shooting of rabbits is illegal. (Grimshaw 1992: 56)

While Grimshaw's approach has been subject to much criticism (see, for instance, Alexiadou 2001; Alexiadou et al. 2013), the notions of argument structure and countability are recurring topics in the context of nominalizations in general, and nominal gerunds in particular. Indeed, processes of nominalization are often associated with a reduction in valency and lower degrees of transitivity (Mackenzie 1985: 32, 1996, 2007; Hopper and Thompson 1980: 285; Koptjevskaja-Tamm 1993), which explains why we are more likely to find nominal gerunds like (7), where the agent is not overtly expressed, than nominal gerunds with both a possessive agent and an object participant realized in the *of*-phrase, as in example (8).

- (7) We attach overriding importance to *the launching of a process* designed to bring comprehensive, just and lasting peace between Israel and her Arab neighbors, including the Palestinians. (COCA)

- (8) *The Soviet Union's launching of the first satellite*, and the subsequent concern for the United States' role as the world's technological leader led to increased calls for schools to serve as training grounds for (. . .). (COCA)

The argument structure of nominal gerunds will be touched on in several chapters of this book, but it will be primarily considered in terms of the effect it may have on the semantics of the gerund constructions. Chapter 4 will provide an overview of the types of participants that nominal gerunds combine with (e.g. only objects, only agents, or both objects and agents)<sup>2</sup> and describe how this influences their referential functioning. Chapter 5 will zoom in on the effect of argument structure and participants on the aspectual properties of the situations referred to by the gerund. Finally, one of the studies undertaken in Chapter 7 looks at the types of verbs that are attracted to nominal and verbal gerund constructions and offers a preliminary outlook on the degree of transitivity of both constructions.

Countability is another feature that often figures in studies on nominalization. Nominal gerunds tend to be characterized as mass or uncount nouns and, correspondingly, are argued to disfavor indefinite articles or plural marking (see, for instance, Wik 1973; Brinton 1991, 1995, 1998; Langacker 1991; Alexiadou 2011). Yet, it has been noted that nominal gerunds sometimes do combine with an indefinite article (Mourelatos 1978; Taylor 1996), as in examples (9a-b):

- (9) a. There was *a capsizing of the boat by Mary*. (Mourelatos 1978: 425)  
 b. It struck them as *an arrogant flaunting of American cultural imperialism*. (Taylor 1996: 269)

While the use of the indefinite article with nominal gerunds is not entirely surprising (since uncount nouns can, under certain circumstances, be individuated), its exact functional import remains undetermined. This issue will be further discussed in detail in Chapter 6, which is devoted to the development and particular function of the indefinite nominal gerund.

A final note on the form of gerunds involves the gerund's position within a broader network of *-ing* forms, which also includes participial *-ing*. Related to this is the more general discussion of linguistic categories, and the precise categorial membership of gerunds. Quirk et al. (1985: 1290–1291) illustrate the “complex

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<sup>2</sup> It should be noted that I have only selected nominal *-ing* forms that are followed by an *of*-phrase, which entails that all instances in my dataset combine with at least one participant.

gradience” from lexicalized count *-ing* forms to fully verbal participial uses with a number of examples, including the following:

- (10) a. *Some paintings of Brown's.*  
 b. *Brown's deft painting of his daughter* is a delight to watch.  
 c. I dislike *Brown's painting his daughter.*  
 d. I dislike *Brown painting his daughter.*  
 e. I watched *Brown painting his daughter.*  
 f. *Painting his daughter*, Brown noticed that his hand was shaking.  
 g. *Brown painting his daughter* that day, I decided to go for a walk.  
 h. *The man painting the girl* is Brown.  
 i. *The silently painting man* is Brown.  
 j. Brown is *painting* his daughter.

Example (10a) illustrates a fully count, lexicalized *-ing* form which denotes a concrete object and can accordingly be pluralized. Example (10b) likewise has the internal syntax of a noun, but does not allow plural marking and refers to the action of painting rather than the result of the action. This form corresponds to what we call the nominal gerund. The *-ing* forms in (10c) and (10d), then, have the internal syntax of a clause and are typically referred to as verbal gerunds with genitive and oblique subject. Some ambiguity arises in example (10e), which can mean ‘I watched Brown as he painted’, in which case the noun *Brown* is followed by postmodifying participial clause, or it can be paraphrased as ‘I watched the process of Brown painting his daughter’, in which case the *-ing* form can be analyzed as a verbal gerund. The remaining examples all include participial *-ing* forms: a participial functioning as a free adjunct in example (10f) (Thompson 1983; Kortmann 1991), an absolute in example (10g) (van de Pol 2016), a postmodifier and premodifier in (10h) and (10i) respectively, and finally a participial as part of a progressive construction in example (10j). Importantly, Quirk et al. do not adhere to the distinction between nominal and verbal gerunds on the one hand, and participials on the other, but rather distinguish between “verbal nouns” in (10b) (i.e. nominal gerunds) and participles in (10c-j). Huddleston and Pullum (2002: 82), in their account of *-ing* forms, label nominal gerunds as “gerundial nouns” and conflate gerunds and present participles into the new category of “gerund-participle”, arguing that “in Modern English the forms are identical”. An alternative proposal is put forward in Aarts (2007), who looks at the English gerund as a case of intersective gradience, i.e. as a construction that has both nominal and verbal properties. Based on a number of formal criteria, Aarts determines to which class the different gerund constructions essentially belong. To example (10b) for instance, he

attributes five nominal properties, viz. the presence of a genitive determiner, adjectival modification, the nominal position of the string headed by *painting*, the prepositional complement and the possibility of adding a restrictive relative clause (e.g. *Brown's deft painting of his daughter that I bought is a delight to watch*) (Pullum 1991: 769, as cited in Aarts 2007: 210). He sees only one verbal property, namely the *-ing* ending (Aarts 2007: 210–211). Because the nominal properties outweigh the verbal ones, Aarts analyses this gerund type as “a noun converging on the verb class” (2007: 2011). For the gerund in (10c), the only nominal properties are the genitive determiner and the nominal external distribution, while (10d) only has the latter nominal property. As such, these gerunds are analyzed as verbs approximating the noun class, with (10d) being located more to the verbal end of the scale. One advantage of this approach, Aarts argues, is that there is no need for a separate category of “gerunds”. Instead, *-ing* forms as in (10b) can be labelled “verbal nouns”, while the term “nominal verb” can be used for the forms in (10c) and (10d) (Aarts 2007: 213).

Both Huddleston and Pullum's and Aarts' approaches have some flaws, however. De Smet (2010), focusing on the usage of verbal gerunds and participles, provides a detailed assessment of both views and argues that while Huddleston and Pullum fail to recognize the fact that language users can still discriminate between gerunds and participles in certain contexts, Aarts' proposal cannot explain the occurrence of particular features that are unique to the gerund category and cannot be reduced to either a nominal or verbal trait, such as the possessive subjectoid (De Smet 2010: 1183–1184). Instead, following insights from Construction Grammar, De Smet suggests that “categories can be included in one another while still maintaining a degree of categorial autonomy” (2010: 1185–1186). The particular position which nominal gerunds have within this network remains underresearched, however, which leaves us with an incomplete picture of the relations that exist between the range of *-ing* forms. Aarts distinguishes between nominal and verbal gerunds purely on the basis of a number of formal features. However, his inclusion of *potential* formal features to the equation (e.g. the nominal gerund can combine with a relative clause) can be considered problematic. In Quirk et al.'s original example, the sentence *Brown's deft painting of his daughter is a delight to watch* is ambiguous between a result and event reading. By adding a relative clause, the result reading becomes apparent. Yet, the absence of a relative clause may be a deliberate choice of the speaker. I therefore argue that only those elements that are actually present in a particular construction should be taken into account. Moreover, even when certain nominal elements are present, we need to differentiate between them at token-level. Adjectival modification, for instance, does not necessarily make the nominal gerund a more prototypical member of the class of

nouns. Rather, particular adjectives may emphasize the processual nature of the situation referred to, while others may not. Compare the following two instances of nominal gerunds:

- (11) a. Someone who knew about these things had told Maman how *the perpetual wearing of boots* might encourage the proper shape of a girl's ankles. (BNC)  
 b. (. . .) *the necessary raising of weirs* and cutting of races would affect the flow of water to other mills. (BNC)

Thus, I argue that within the classes of nominal and verbal gerunds, we can discern a gradience between more nominal and more clausal forms by recognizing the unique set of formal features that figure at *token-level*. This will be especially relevant in Chapter 6, which zooms in on intra-categorical gradience with nominal gerunds – most notably by contrasting the use of bare and indefinite nominal gerunds – as well as in Chapter 7, where I examine the influence of particular collocates on the conceptual profile of nominal and verbal gerunds.

Finally, this study will above all emphasize the importance of incorporating functional properties into our understanding of the configuration of *-ing* forms in Present-day English. On the one hand, it will be shown that nominal and verbal gerunds still share a number of functional features that motivate the existence of an encompassing gerundial category. On the other hand, an approach that takes into account the interaction between formal and functional features will allow us to map out a more fine-grained cline between nominal and clausal gerund constructions which includes more clausal uses of nominal gerunds as well as nominal uses of verbal gerunds. Before introducing the two main functional axes that have been included in this study and which are elaborated in Chapters 4 and 5, however, I will first present an overview of current views on the semantics of Present-day English gerunds in the following section.

### 2.1.2 Meaning

We can roughly divide the studies of the semantics of gerunds into three groups. A first group centers on the semantics of the *-ing* suffix, most notably its aspectual value. In the case of verbal gerunds, the semantics of *-ing* is typically contrasted with that of the *to*-infinitive (Bolinger 1968; Conrad 1982; Wierzbicka 1988; Rudanko 1989; Duffley 2000, 2003; Smith and Escobedo 2002), whereas the semantic value of *-ing* in nominal gerunds is compared to that of other derivational suffixes (Quirk et al. 1985; Brinton 1991, 1995, 1998; Alexiadou et al. 2013). Other



studies focus on the semantics of *-ing* in general, including its participial use (De Smet 2010; De Smet and Heyvaert 2009, 2011). Within Cognitive Grammar, the *-ing* suffix has been attributed an “imperfectivizing” or “progressive” value (Langacker 1991; Smith and Escobedo 2002; Egan 2008), implying that it represents a situation as ongoing. In the same vein, Wierzbicka (1988) argues that, in contexts where time is relevant, *-ing* complements express simultaneity between the situation expressed in the matrix clause and the complement clause, as is illustrated in example (12a). Nominal gerunds, then, are argued to denote “activit[ies] that are in process” (Quirk et al. 1985: 1292) and which are thus “durative, atelic, and dynamic” (Brinton 1998: 48). These claims are typically illustrated by means of the following examples:

- (12) a. Mary enjoyed *eating the steak*. (Wierzbicka 1988: 67)  
       b. Mary promised *to eat the steak*.
- (13) a. *His exploring of the mountain* is taking a long time  
       b. *His exploration of the mountain* took/will take three weeks.  
       (Quirk et al. 1985: 1551)

More recently, however, these approaches have been problematized by a number of counterexamples:

- (14) You seem to be under the misapprehension that I intend *making love to you*. (BNC, De Smet 2013: 28)
- (15) The confrontation between Nicholas and the wives began soon after *the sentencing of their husbands*, in July 1826. (COCA)

In his comparison of gerundive and infinitival complementation, Duffley (2000: 228) notes that the *-ing* suffix has an “indifference to temporality” and that “any temporal relation between the events expressed by the *-ing* and the main verb is simply a logical implication based on the latter’s lexical meaning”. This line of thought is extended in De Smet and Heyvaert (2009), who propose that *-ing* merely has an “atemporalizing” effect on the verbal process and that its semantics largely depend on the meaning of the matrix predicate, the schematic transitive construction and other contextual elements (also see De Smet and Heyvaert 2011: 482; De Smet 2010: 1182; De Smet 2013: 140). A number of lacunae remain, however. As of yet, there are no large-scale corpus-based studies which quantitatively map out the range of aspectual values that gerunds can express. More importantly, there is a lack of studies that explicitly compare the aspectual features of

nominal and verbal gerunds, even though this comparison could contribute to our understanding of the semantic and aspectual value of the *-ing* suffix. Indeed, one would expect that constructions which are derived by means of the same suffix and which have similar distributional potential would exhibit comparable aspectual behavior. This assumption will, however, be partly challenged in Chapter 5.

A second category of studies into the semantics of gerunds explicitly contrasts nominal and verbal gerunds and does so on the basis of the labels of “action” vs. “fact”, “second-order” vs. “third-order entity” or “state-of-affairs” vs. “proposition” (Lees 1960; Vendler 1968; Fraser 1970; Langacker 1991; Dik and Hengeveld 1991; Mackenzie 1996, 2004; Cristofaro 2003; Dixon 2006; Boye 2012). They commonly use contrastive – yet “invented” – examples of nominal and verbal gerunds such as the ones in (16) and (17):

- (16) a. He criticized *John’s throwing of the dice*.  
       b. He criticized *John’s throwing the dice*.  
       (Dixon 2005: 323)

- (17) What did you think of *his driving*? (Mackenzie 2004: 981)

The main line of argumentation put forward by these studies is that nominal gerunds as in (16a) typically convey action-referring entities that can be located in space and time, while verbal gerunds as in (16b) tend to be factive in meaning. As such, the sentence in (16a) can be paraphrased as ‘He criticized *the way in which* John threw the dice’, whereas (16b) is paraphrased as ‘He criticized *the fact that* John threw the dice’. Likewise, the structural ambiguity of the gerund construction in (17) (allowing either a nominal or verbal gerund analysis) is argued to correspond to a semantic distinction between a manner-reading and a factive reading (e.g. ‘the way in which he drove’ as the default interpretation for nominal gerunds and ‘the fact that he drove’ for verbal gerunds). Following criticism by, amongst others, Langacker (1991), Taylor (1996) and Heyvaert (2008), these claims will be scrutinized in Chapter 7, which considers the action-fact distinction from a distributional perspective by checking whether the collocational preferences of nominal and verbal gerunds reflect this alleged semantic dichotomy.

In a number of more recent in-depth, corpus-based studies of the English gerund, the focus has shifted from the rather vague semantic labels of action and fact to the functioning of gerunds as discourse referents. Reference as a linguistic function is concerned with the identification of entities in discourse and is typically attributed to the class of nouns (Croft 1991: 52, see Section 2.3.1).

Studies have focused on the extent to which verbal gerunds, as noun phrases with a clausal syntax, can fulfil this function; and, more specifically, how they can do so despite the absence of overt markers of determination (cf. *supra*: Schachter 1976; Heyvaert 2003, 2008). Other studies focus on diachronic shifts in the gerund's referential profile and examine how referential properties can explain the gradual disappearance of a construction like the bare nominal gerund while at the same time motivating the persistence of the definite nominal gerund (De Smet 2007; De Smet 2008; Fonteyn 2016; Fonteyn and Heyvaert 2018). A detailed discussion and fine-tuning of the referential models proposed by these studies will be given in Chapter 4.

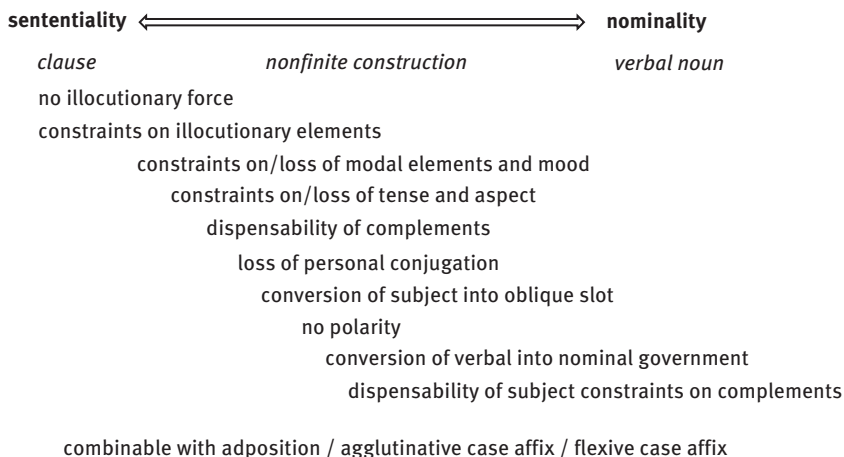
## 2.2 Gerunds as nominalizations

While the previous section zoomed in on the form and function of gerunds, this section will situate gerunds within the broader theoretical framework of nominalization. The formal features of nominal and verbal gerunds can be viewed as part of a larger “nominalization hierarchy”, which can shed further light on the position of gerunds on the noun-verb cline. As will be shown in Section 2.3, however, cognitive-functional approaches, which have devoted much attention to the functional and semantic nature of nouns and verbs, can also serve as a useful framework to study gradience in the gerund system.

Nominalization hierarchies are typically concerned with the extent to which nominalizations have retained verbal (morphosyntactic) categories and have acquired nominal ones. These hierarchies can be related to the clines proposed by Ross (1973) and Quirk et al. (1985) (see examples [22] and [28]), but, crucially, they posit that there is a certain ordering to the verbal and nominal features that are lost and acquired in nominalization (Malchukov 2004: 9; also see Comrie and Thompson 1985; Noonan 1985; Mackenzie 1987; Lehmann 1988; Givón 1990; Croft 1991; Koptjevskaja-Tamm 1993; Dik 1997). A typical example of such a hierarchy is Lehmann's (1988) “desententialization scale”, as illustrated in Figure 1, which presents a continuum of “inner and outer processes” that accompany a transcatelary process – in this case the categorial shift from clause to verbal noun.

As can be seen, Lehmann mainly focuses on the loss of verbal properties, or the “decategorization” part of nominalization (Hopper and Thompson 1984; Malchukov 2004), such as the constraints on tense and aspect markers and the loss of polarity elements. Mackenzie (1987, 1996), on the other hand, primarily focusing on “recategorization” or the acquisition of nominal properties, proposes four “degrees of nominalization”:

- (i) Partial deverbalization, i.e. the loss of “otherwise expected” verbal properties;



**Figure 1:** Lehmann's (1988) desententialization scale.

- (ii) External trappings of NP status, i.e. adpositions or affixes that indicate the semantic, syntactic or pragmatic function of the referring expression;
- (iii) Optional presence of a possessor, articles or demonstratives;
- (iv) High degree of nouniness, i.e. optional presence of adjectives, gender and/or countability

A more comprehensive account is offered in Malchukov (2004), who formulates hierarchies of nominal and verbal categories and brings them together in one “Generalized Scale Model”, which is argued to predict the order in which features are lost and gained in the transcategorial operation of nominalization. Deverbalization is argued to involve the ordered loss of the following categories or “layers”: illocutionary force markers, agreement, mood, tense, aspect and valency. Nominalization, then, entails the ordered acquisition of case marking, determination, possessives, number and classifiers. To what extent these two hierarchies overlap (e.g. once a nominalization can take on adjectival modification, it loses the verbal categories of tense and aspect) is argued to depend on language-specific blocking effects.

Crucially, there is also a diachronic component to nominalization processes. In this respect, the English gerund – and more specifically the verbal gerund – shows that nominalization hierarchies cannot always be straightforwardly interpreted (Malchukov 2004: 120). Indeed, while synchronically, the verbal gerund can be considered a case of nominalization, the construction is actually the result

of a process of diachronic verbalization of the original nominal gerund form (Tabor and Traugott 1998: 240–244; Malchukov 2004: 121; Fonteyn 2019). From Middle English onwards, the nominal gerund began to exhibit a more clausal internal syntax, taking true direct objects and adverbial modification and, later on, voice and secondary tense marking, as in example (18) (Mustanoja 1960; Donner 1986; Tajima 1985; van der Wurff 1993; Kranich 2007).

- (18) And craving also pardon for *hauing troubled yor honor wth so tedious a letter*  
 I most humbly take my leaue ffrom [sic.] Paris the second of Januarie 1598.  
 (1599, PPCEME, Fonteyn 2019: 44)

According to Malchukov (2004: 55), the historical development of the verbal gerund explains why, in Present-day English, verbal gerunds can combine with a possessive subject but not with articles, as in (19). While the nominalization hierarchy would predict that if a nominalization can combine with possessives, it should also allow for articles, the verbalization hierarchy actually predicts that articles are lost before possessives.

- (19) a. His driving his car so dangerously.  
 b. ?\* The driving his car so dangerously.  
 (Malchukov 2004: 55)

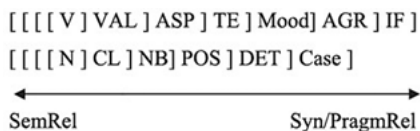
Still, the actual history of the verbal gerund is somewhat more complicated. As shown in diachronic studies (Fanego 2004; De Smet 2008; Fonteyn and Heyvaert 2018; Fonteyn 2019), the main locus of change in the gerund system is constituted by the bare nominal gerund, which, due to its lack of overt determiners, more easily allowed for reanalysis (Fanego 2004). The gerund in example (20), for instance, is essentially ambiguous between a nominal and a verbal structure, since *sore* can be interpreted as either an adjective or an adverb.

- (20) Vnder þe Monument 3eo stod wipoute *wepyng sore*. (c1280; Tajima 1985: 101, as cited in Fonteyn 2019: 49)

Thus, the verbal gerund initially replaced nominal gerunds without initial determiner, only later spreading to contexts with a possessive determiner. During the Early Modern English period, verbal gerunds moreover often occurred with a definite article. The disappearance of such hybrid gerunds in the Late Modern period has been attributed to linguistic prescriptivism, which discouraged using a definite article with a verbal construction (Fanego 2006; Fonteyn 2016: 50). Malchukov's claim that verbal gerunds lost the ability to combine with a definite

article but maintained possessive marking as a mere consequence of the verbalization hierarchy is therefore not entirely accurate.

More importantly, however, the hierarchies proposed by Malchukov and Lehmann differ from the ones discussed by Ross (1973) and Quirk et al. (1985) in that they acknowledge that there is a functional side to formal gradience in nominalization processes. Malchukov, for instance, remarks that his hierarchy is functionally motivated. He argues that external layers, such as illocutionary force markers or agreement (with verbs) and case marking or determination (with nouns), are more readily lost or acquired in transcategorial operations because they “reflect the syntactic and/or pragmatic function of a given lexical item more directly than internal [layers]” (Malchukov 2004: 26). When nominalizing a verb, case marking serves to indicate the new syntactic function of the form, while the presence of determination facilitates its transformation into a referring expression. The inner layers, on the other hand, are claimed to be more relevant to the semantics of the root, and thus tend to be retained in decategorization (e.g. valency) and are less readily acquired in recategorization (e.g. number and classifier markers). The resulting hierarchy is illustrated in Figure 2.



**Figure 2:** Malchukov's (2004) Generalized Scale Model of nominal and verbal hierarchies and their dimensions of relevance (Malchukov 2006: 981).

Likewise, Lehmann (1982: 66) points out that nominalization is “a language operation which can be realized in different degrees of strength” and that the processes that accompany it are “both of a syntactic and a semantic nature”. The loss of mood, aspect and tense markers on the level of morphosyntax is thus reflected on a semantic level in the loss of specification and individuation, and, correspondingly, in an increasing “typification” of the expression (Lehmann 1982: 68). Lehmann illustrates his claim with examples of English gerunds, which can either represent “weak nominalizations” (i.e. verbal gerunds) or “strong nominalizations” (i.e. nominal gerunds). The absence of determination with weak nominalizations, he argues, is reflective of the fact that they are more individuated than strong nominalizations. According to Lehmann, verbal gerunds either occasionally combine with definite articles or do not occur with determination at all because their individuated status lends them inherent definiteness. Nominal gerunds, on the other hand, more freely occur with quantifiers and determiners because the more abstract (“typified”) concepts or situations they denote do not impose any specific constraints on the type

of determination they can combine with (Lehmann 1982: 78). In other words, the pragmatic concept of definiteness or individuation is not inherent to the nominalized verb anymore, but becomes a feature that is expressed by additional nominal marking.

The proposals by Lehmann and Malchukov appear to be the first attempts at reconciling the formal gradience of nominalization structures with a functional cline of nominalization. Yet, the functional properties put forward in them still appear arbitrary to some extent (e.g. why “typification” as the main functional dimension behind nominalization?), and the complexity of formal features still largely prevails over the functional ones, with formal gradience being a complex phenomenon that affects various aspects of a construction while the functional dimension is mainly limited to one or two properties (e.g. reference, typification). The following section will therefore introduce two theoretical frameworks that allow us to operationalize the multi-faceted functional-semantic value of nominalizations.

## 2.3 Theoretical underpinnings

The present study builds on two related approaches within the theoretical framework of cognitive-functional linguistics, viz. Cognitive Grammar and Construction Grammar. Both approaches have in common that do not assume sharp boundaries between morphology, lexicon and syntax, but rather think of language as an assembly of form-meaning pairings which are part of a lexicon-syntax continuum. One of the main tenets of Cognitive Grammar is its conceptualist approach to meaning, which entails that “meaning (. . .) [resides] in the minds of speakers” and is thus essentially dynamic in nature (Broccias 2013: 195). In other words, meaning is considered to be not just a matter of *content*, but also of *construal* (Langacker 2015). Importantly, meaning is not restricted to lexical expressions, but can also be attributed to more abstract grammatical entities such as word classes. In Section 2.3.1, I discuss some of the conceptual definitions of nouns and verbs proposed within Cognitive Grammar and other cognitive-functional approaches. The concepts brought forward by these frameworks will be further developed in Part II of this study, which is mainly concerned with the different ways in which nominal and verbal gerunds conceptualize or *construe* situations, and which is thus firmly grounded in cognitive-functional theories.

Because we are also interested in the *relations* between nominal and verbal gerunds, and the potential gradience and variation that may exist between them, this study will also draw on insights from the Construction Grammar strand of cognitive-functional linguistics. One of the basic assumptions of Construction Grammar is that constructions are linked with each other by means of taxonomic

networks (Goldberg 1995, 2006; Booij 2010; Diessel 2015; also see Lakoff 1987; Langacker 1987a; Fillmore, Kay and O'Connor 1988; Hudson 1990, 2007). Despite the historical interrelatedness of nominal and verbal gerunds, little is known about the connections that exist between them in Present-day English. Section 2.3.2 will therefore examine the relevance of the notion of a constructional network to the study of gerunds. This will lay the foundation for Part III of this book, which looks at variation between nominal and verbal gerunds at different levels of schematicity.

### 2.3.1 Cognitive-functional approaches to nouns, verbs and nominalization

In Langacker's seminal work *Foundations of Cognitive Grammar*, nominalization is defined as involving "conceptual reification whose character can be explicated with reference to the notional definitions proposed for the noun and verb classes" (1991: 22). Two elements are of importance here: first, to gain a better understanding of the formal and functional processes involved in deverbal nominalization, we have to map out the unique (conceptual) characteristics of nouns and verbs. Secondly, the notion of "reification" is presented as central to a conceptual interpretation of nominalization.

It is generally assumed that nouns and verbs are categories that have their own unique formal as well as functional properties. Interestingly, it is precisely the existence of a process like nominalization which "presupposes functional distinctions between noun phrases and verb phrases" (Koptjevskaja-Tamm 1993: 55). Whether the lexical categories of nouns and verbs and the properties that are attributed to them are themselves universal or rather language-specific has been the topic of much debate. While some studies venture to formulate a universally-applicable definition or characterization of nouns and verbs (see, amongst others, Bolinger 1967; Hopper and Thompson 1984; Wierzbicka 1986, 1996; Givón 1979, 2001; Langacker 1987b, 1991, 2008), others argue that lexical categories are language-specific and therefore use different terminology when referring to crosslinguistically universal categories (Dryer 1997; Haspelmath 2010, 2012; Croft 1991, 2001, 2003 – cf. *infra* for a discussion of Croft).

Early semantic approaches to the description of nouns and verbs offered an ontological typology of linguistic categories that corresponds to prototypical semantic values: "nouns denote persons, places, or things; adjectives denote properties or qualities; verbs denote actions" (Croft 1991: 38). Nominalizations, however, tend to problematize this semantic classification, since forms like *[John's] jumping* denote actions but morphosyntactically behave like nouns. There are two ways of dealing with this problem. Firstly, we can abandon the semantic definition and only focus on language-internal or structural features.



This point of view is defended in, for instance, Palmer (1971) and Schachter (1985, 2007), who argue that “the primary criteria for parts-of-speech classification are grammatical, not semantic” (Schachter 1985: 3). These grammatical criteria include phrase-internal characteristics, such as the occurrence of determiners with nouns or tense and mood markers with verbs, as well as distributional features, most notably the syntactic positions a form can occupy. While a focus on lexicogrammar certainly has its merits – see, for instance, their usefulness in formal nominalization hierarchies, cf. *supra* – we run into problems when using it as the sole criterion for distinguishing between word classes. Taylor argues that “as a means for defining the word classes, distributional criteria turn out to be ultimately circular”, illustrating his claim by saying that a criterion like tense inflection, which should identify a form as belonging to the class of verbs, “is a quintessentially verbal category, whose characterization presupposes the very notion ‘verb’ that the criterion is meant to identify” (2002: 170).

More commonly, the distributional approaches are supplemented by conceptual-semantic definitions (Langacker 1987b, 1991, 2008), discourse-functional characterizations (Hopper and Thompson 1984) or a combination of semantic and pragmatic properties (Croft 1991, 2001). From the perspective of Cognitive Grammar, Langacker attempts to formulate a universally valid definition that is applicable to both prototypical and non-prototypical nouns and verbs and which hinges on the notion of “construal”. From a typological point of view, Croft discerns two crosslinguistically comparable concepts, viz. the semantic classes of “object”, “property” and “action” on the one hand, and the propositional acts of “reference”, “modification” and “predication” on the other. Hopper and Thompson, then, employ a more discourse-functionally oriented definition which centers on discourse manipulability. I will briefly discuss each of these approaches in the following paragraphs.

Langacker’s conceptual definition involves two proposals, viz. an “idealized cognitive model” of the world which accounts for the prototypical uses of nouns and verbs, and a more abstract schematic characterization which should be applicable to the classes overall (Langacker 1991: 13–22). The idealized cognitive model uses the analogy of a game of billiards and is hence called the “billiard-ball model”. Just like a pool table, Langacker argues, our world can be viewed as being populated by discrete physical objects which move through space and make contact with each other (Langacker 1991: 13). In this model, the discrete physical objects or billiard balls correspond to the class of nouns, while the energetic interactions between them are symbols for the class of verbs. These two features of the model are differentiated by means of four elements, viz. space, time, material substance, and energy (Langacker 1991: 14). Material substances are primarily manifested in a spatial context (e.g. *Where is the billiard ball?*), while an energetic source “is only observable through change and thus requires time for

its manifestation” (1991: 14). Objects and nouns, which are typically composed of material substance, are thus conceived of as being instantiated in the domain of space, while interactions and verbs are instantiated in the temporal domain. Langacker distinguishes two additional oppositions: compactness/expansiveness and conceptual autonomy/dependence. Whereas objects are considered compact on the level of space (cf. the material discreteness of a billiard ball) but expansive with regard to time (cf. the endurance of a billiard ball, unless it is “subjected to destructive forces” [Givón 1979: 320–323, as cited in Langacker 1991: 14]), interactions are seen as spatially extensive (they include the locations of various billiard balls and thus “occupy” more space on the pooltable) but temporally discrete (the interaction happens at one particular moment). Secondly, whereas objects are conceptually autonomous, since they do not depend on other objects or interactions to motivate their spatial existence, interactions are conceptually dependent since they “inherently presuppose[e] some reference – however vague or schematic – to the entities through which [they are] manifested” (Langacker 1991: 14).

Although Langacker acknowledges that a comparison of nouns and verbs with physical objects and energetic interactions only works for the prototypes of each category, he argues that it is also possible to formulate a more abstract, all-encompassing characterization of nouns and verbs. Instead of objective, truth-conditional factors, Langacker proposes a definition that is based on cognitive processing and “our capacity for imagery”: the particular semantic value of nouns and verbs “resides in a particular type of *construal*” (Langacker 1991: 15, emphasis mine). More specifically, nouns and verbs profile or designate different aspects of three basic abstract constructs, viz. interconnection, entity and region. The notion of “entity” applies to “anything one might refer to for analytical purposes” (Langacker 1991: 16) and can range from a physical object to a less tangible notion such as a span of time. When entities are co-conceived, they form an interconnection. A set of interconnected entities, in its turn, gives rise to what Langacker calls “a region”. Nouns, then, profile a region consisting of interconnected entities in a particular domain, while verbs only profile the interconnections between the entities rather than the entities themselves or the region they establish (Langacker 1991: 19). In the case of verbs, the region that is formed by the interconnected entities remains latent, i.e. it is “not exploited for any further cognitive processing” (Langacker 1991: 18).

Croft’s classification, on the other hand, does not explicitly apply to nouns and verbs, but to semantic classes and pragmatic functions (Croft 1991: 53). The semantic classes distinguished by Croft correspond to the previously mentioned ontological typology of objects, properties and actions. This traditional classification is defined in more detail by means of four parameters: valency, stativity, persistence and gradability. The first feature, valency, refers to the “inherent

relationality” of a concept and roughly corresponds to Langacker’s notion of conceptual autonomy. The default valency of objects is considered “0”, since their existence does not depend on the existence of other entities, while the valency of actions is at least 1. Objects and actions also differ with respect to the temporal notion of stativity, the latter typically involving a change of state while the former do not. Persistence, then, is related to stativity but focuses on length rather than change of state. Objects are considered to be temporally persistent, while actions are prototypically transitory (cf. Langacker’s opposition between temporal expansiveness vs. discreteness with nouns and verbs). Finally, gradability is used to distinguish objects and actions from properties, which can be manifested in degrees.

More important, however, are the pragmatic functions expressed by these semantic classes, which are defined as propositional speech acts “that organiz[e] the information denoted by the lexical roots for communication and thereby conceptualiz[e] it in a certain way” (Croft 1991: 50). Croft discerns three basic pragmatic functions, viz. reference, modification and predication. In principle, each pragmatic function can combine with a particular semantic class, yet some combinations are typologically unmarked, while others are not – in these cases, the combination is characterized by the presence of morphological function-indicating coding (Croft 1991: 58). The semantic class of objects, for instance, is associated with the pragmatic function of reference, i.e. the identification of entities, while the class of actions prototypically combines with the function of predication, i.e. saying something about a referent. Nominalizations such as *jumping*, on the other hand, semantically denote actions but pragmatically function as referring expressions and are, therefore, morphologically marked by means of the *-ing* suffix.

A final approach to lexical categories to be discussed here is the one presented by Hopper and Thompson (1984). Their proposal differs from Langacker’s and Croft’s in that they mainly focus on the discourse function of nouns and verbs. Still, similar to Croft, they also zoom in on referentiality as the main discourse function of nouns. Based on Du Bois (1980) and Givón (1981), referential noun phrases are described as entities which have “continuity of identity” and can thus be picked up in subsequent discourse (Hopper and Thompson 1984: 711). A prototypical noun is above all “salient” and represents an autonomous, concrete and individuated entity (Hopper and Thompson 1984: 718). The primary discourse function of verbs, on the other hand, is to report discourse events (Hopper and Thompson 1984: 726). A second important contribution of Hopper and Thompson is their attention to “degrees of categoriality” on a functional and formal level, recognizing for instance that some nouns are less discourse-manipulable or referential than others, such as the predicate nominal in (21):

- (21) Il est professeur. [He is a teacher] (Hopper and Thompson 1984: 716)

The lower categoriality of the noun phrase in (21) is reflected in its morphosyntactic marking: it displays, in Hopper and Thompson’s terms, fewer “nominal trappings” – witness the absence of determination (Hopper and Thompson 1984: 711). Participles functioning as free adjuncts, as in example (22), are mentioned as examples of low categorial verbs, since they conceptualize backgrounded, discourse-presupposed events:

- (22) Having put out the fire, we climbed into our sleeping bags.  
(Hopper and Thompson 1984: 740)

This less prototypical discourse function corresponds to the absence of tense and aspect markers with the participial verb form.

The main findings of the three approaches discussed in this section are summarized in Table 1 below. In Chapter 4, I will devote particular attention to Croft’s and Hopper and Thompson’s discourse-functional concept of reference, which I will link to Langacker’s abstract concepts of conceptual autonomy vs. dependence and spatial vs. temporal instantiation. Chapter 5, then, will be concerned with those features that pertain to temporality, such as temporal persistence vs. transience.

**Table 1:** A semantic and functional characterization of nouns (objects) and verbs (actions).

	Nouns / Objects	Verbs / Actions
<b>Langacker</b>	Instantiated in spatial domain Temporal expansiveness Spatial discreteness Conceptually autonomous Profile a region Entities lose individual salience	Instantiated in temporal domain Temporal discreteness Spatial expansiveness Conceptually dependent Profile interconnections Complex configuration of entities and interactions
<b>Croft</b>	Stative Persistent Valency = 0 Unmarked combination with reference	Change of state Transitory Valency ≥ 1 Unmarked combination with predication
<b>Hopper and Thompson</b>	Discourse-manipulable	Report event

A closer look at the unique features of nouns and verbs shows, above all, that the process of nominalization is more than just transforming a verb phrase into a noun phrase, but that it is a functionally motivated choice of the speaker which has conceptual implications for the conveyed situation. The functional motivations behind nominalization are often explained in terms of cognitive processing, human cognition being able to process concrete entities more easily than abstract experiences (Hopper and Thompson 1984: 746; also see Halliday and Matthiessen 2014: Ch. 10). In their work on metaphors, Lakoff and Johnson (1980: 25–30) argue that expressing experiences in terms of objects and substances allows us to linguistically manipulate them, e.g. to refer to them, categorize and quantify them, and, in doing so, helps us to better understand them.<sup>3</sup> This metaphorical shift is also known as reification. Radden and Dirven (2007: 79) define reification as “giving relational concepts the kind of stable existence that we typically associate with things”. Langacker (1991: 26) offers a more detailed account, describing reification as a “profile shift”, whereby the original processual construal of an event is portrayed as an “abstract region”. A prototypical verb conceptualizes a situation as a process unfolding through time and consisting of a series of so-called “relational configurations” which represent the various component states of the event (Langacker 1987b: 75, Langacker 1991: 90). However, the region that is established by these component states remains latent in the clausal construction. The nominalization, then, puts this region into profile and thereby shifts the focus from the individual relational configurations to a higher-order collective representation of all component states (1987b: 91). This conceptual difference can be linked to different ways of “scanning” a situation: with verbs, “the conceptualizer scans the component states in serial fashion”, i.e. sequentially, and the situation is thus profiled as continuing through time. Nominalizations, on the other hand, involve “summary scanning” and activate a situation’s component states “holistically as a single gestalt” (Langacker 1991: 21). Importantly, while the conceptual content of the verb and nominalization is similar, it is construed differently. Thus, Langacker (1991: 25) argues, “the semantic contribution of nominalization is limited to profiling (an aspect of construal)”.

The concrete implications of this profile shift, however, are largely unspecified. While Langacker (1987b: 90) argues that “nominalizing a verb necessarily

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<sup>3</sup> On the level of discourse, then, nominalization is argued to have a backgrounding effect, representing a situation as presupposed (Mackenzie 1987, 2007), as well as a text-compressing or “packaging” effect (Koptjevskaja-Tamm 1993: 266, Halliday and Matthiessen 2014: 930), allowing us to simplify complex passages of text.

endows it with the conceptual properties characteristic of nouns”, the features of atemporalization, time-stability, summary scanning and holistic construal remain purely abstract concepts as long as they are not linked to formal nominal strategies.<sup>4</sup> As such, it is difficult to imagine the concrete implications of shifting an event’s profile from interconnections to a region of entities. Secondly, Langacker – and most of the other functional approaches – leave open the question as to whether it is possible to have “degrees” of profile shift or reification. Is there, for instance, an intermediate position between summary and sequential scanning, or can a situation be construed more or less holistically depending on the nominalization structure?

It is argued here that most of these issues can be resolved by taking into account the full range of gerund instantiations, thereby recognizing both inter- and intra-categorical gradience within the larger classes of nominal and verbal gerunds. In the next section, I show how the framework of Construction Grammar can provide the necessary tools to map out the configuration of these instantiations and the relations that exist between them.

### 2.3.2 A Construction Grammar approach to the gerund network

#### 2.3.2.1 Background

The term Construction Grammar refers to a number of construction-based theories of language which posit that our (grammatical) knowledge of language is made up of a network of interconnected signs or constructions, i.e. conventional, learned form-function pairings (Goldberg 2013: 17; also see Goldberg 1995, 2006). These form-meaning pairings include morphemes, words, idioms as well as phrasal patterns (Goldberg 2006: 5). Initially, research within Construction Grammar tended to focus on constructions which are not typically considered to be part of “core grammar” (see, for instance, the *What’s X doing Y* construction in Fillmore and Kay 1999 or caused motion constructions like *she sneezed the napkin off the table* in Goldberg 1995), claiming that “fundamental insights can be gained from considering such non-core cases” (Goldberg 1995: 6). More recently, however, constructionist approaches have also proven useful in the study of well-documented grammatical phenomena. The idea that linguistic description should account for

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<sup>4</sup> A first step towards integrating form into this conceptual approach is given by Langacker’s notion of nominal and clausal “grounding”, which contrast the effect of tense and mood marking with that of nominal determination in the establishing of reference (see Chapter 4).

“the entire class of structures that make up language” (Goldberg 1995: 6) is also applicable to this particular study, as it is argued here that incorporating a much wider range of gerund constructions can shed new light on the gerund system as a whole.

Displaying a clear affinity to Cognitive Grammar, approaches such as Radical Construction Grammar (Croft 2001) or Cognitive Construction Grammar (Goldberg 1995, 2006; also see Boas 2013 for an overview) examine how cognitive principles such as construal and conceptualization engage with the organization of the constructional network (Boas 2013: 248). Researchers working within Construction Grammar are especially interested in the *constraints* on (grammatical) constructions, i.e. the ways in which language-internal and language-external factors condition the actual use of constructions. By augmenting the lexicogrammatical and semantic description of gerunds with this usage-based, constructionist perspective, it is argued, we can arrive at a more fleshed-out conceptual model of the gerund system.

Central to the idea of a constructional network are the concepts of schematicity and links. Firstly, a network is composed of different levels of schematicity. Traugott and Trousdale (2013: 14) define linguistic schemas as “abstractions across sets of constructions which are (unconsciously) perceived by language-users to be closely related to each other in the constructional network”. These higher-order schemas can have various subschemas, which in their turn generalize over a set of micro-constructions, i.e. the individual instantiations of a more general schema. The construction *the banning of explicit images*, for instance, is a micro-construction of the subschema “nominal gerund” (DET [V-ing]<sub>N</sub> of), which, in its turn, is a subschema of the higher-order schema “deverbal nominalization” ([V]<sub>N</sub>). Part II of this book will mainly be concerned with the subschema level of gerund constructions, as it describes the functional prototypes of nominal and verbal gerunds, abstracting away from individual micro-constructions. In Part III, then, I focus on two underresearched levels of analysis, viz. token-level constructions of nominal and verbal gerunds (Chapter 7) as well as structural subtypes of nominal and verbal gerunds at the meso-level (Chapter 8).

While Traugott and Trousdale (2013: 14) note that schemas and subschemas do not necessarily symbolize mental representations, but can be considered “linguists’ categories”, i.e. “subparts of the linguistic system that the linguist picks out for discussion and analysis”, Hilpert (2013: 208–209) underscores the importance of choosing the right level of abstraction for the grammatical description of a construction. He gives the example of the *V-ment* construction (e.g. *achievement, apartment, instrument*), which displays different degrees of productivity in different structural subtypes, to show that the assessment of morphological productivity should take place at different levels of abstraction. Likewise, he argues,

not all constructions which seem semantically related at first sight require an overarching construction. This issue is particularly relevant to our discussion of nominal and verbal gerunds. On the basis of both their historical and formal relatedness, we might intuitively assume that nominal and verbal gerund constructions can be considered subschemas of a more abstract [V-ing]<sub>N</sub> or “gerund” schema. At the same time, analyses such as those by Huddleston and Pullum (2002), who put forward a “gerund-participle” category, suggest that verbal gerunds form a higher-order [V-ing] construction together with present participles, thus seemingly making a gerund schema which generalizes over nominal and verbal gerund constructions redundant. I will argue, however, that both proposals are not entirely irreconcilable from a Construction Grammar point of view. In Part III of this study, it is shown that the verbal gerund construction can instantiate a number of constructional subtypes, some of which display functional overlap with the nominal gerund construction, suggesting that they inherit from the same abstract schema. Most constructional subtypes, however, convey uses which are clearly distinct from those of nominal gerunds and instead more closely resemble other clausal *-ing* forms. In those cases, the verbal gerund sanctions a higher-order schema which is not linked to the nominal gerund construction.

The micro-constructions, schemas and subschemas in the constructional network are connected with each other via various types of inheritance links, which are based on similarity in form and/or meaning (Diessel 2015; Coussé, Andersson and Olofsson 2018: 8). Diessel (2015: 303) discerns four types of links, viz. taxonomic links (which connect constructions at different levels of abstractness), horizontal links (which connect constructions at the same level of abstractness), syntactic links (which establish connections between constructions and syntactic categories) and lexical links (which establish connections between constructions and lexical expressions). Part II of this study will mainly be concerned with the syntactic links between nominal and verbal gerunds on the one hand, and the syntactic categories of nouns and verbs on the other. The taxonomic and horizontal links between gerund constructions, as well as the lexical links between gerunds and the verbs they typically derive from, will be dealt with in Part III. It is especially these links which have not received much attention in the literature, but which can reveal more about the present-day functioning of gerund constructions.

From a constructionist point of view, then, intra-categorical gradience – or gradience within a certain construction – can be assessed by taking into account the different constructional subtypes sanctioned by a more schematic construction at the meso-level. Intercategorical gradience, i.e. gradience between different constructions, on the other hand, can be related to the horizontal links established



between the constructions.<sup>5</sup> Another way of looking at intercategory gradience is by examining the variation that exists between two or more constructions. If certain categories or constructions are said to “converge on one another” in terms of formal and semantic resemblance, to use Aarts’ (2007) terminology, we may expect them to display variation as well. The following section will therefore expand on the treatment of (grammatical) variation within the framework of Construction Grammar.

### 2.3.2.2 Construction Grammar approaches to variation in grammar

Constructionist approaches towards (grammatical) variation can be set off against earlier transformational theories in that they are essentially non-derivational, meaning that they do not analyze one variant as the transformation of another. While variation in generative terms can be described as “different outputs generated from a single input” (Dufter et al. 2009: 1), Construction Grammar considers grammatical variants as independent constructions, with each surface structure having “its own syntactic, semantic and pragmatic properties” (Cappelle 2006: 3; also see Levin 1993; Michaelis and Ruppenhofer 2001). Hence, Dufter, Fleischer and Seiler (2009: 12) acknowledge that constructionist approaches are ideally suited to “capture variation phenomena in a straightforward way”, as “nothing prevents two or more competing construction schemata (. . .) to be stored side by side”. Hoffmann and Trousdale (2011: 9) note that “modelling linguistic variation is central to all construction grammar approaches”, adding that “Construction Grammar is a framework that cannot only model variation, but also provides principled explanations for the statistical and contextual factors affecting variation” (2011: 7).

By operationalizing and empirically assessing intra- and extra-linguistic factors, often through the use of multivariate statistical techniques, recent research within Construction Grammar has provided us with more insight into the determinants of grammatical variation on the level of sounds, words and phrases. More recently, specific attention has been devoted to the study of *morphosyntactic alternations*, i.e. phrase-level constructions entering into “conditioned but systematic variation” (Perek 2015: 147). The nature of this conditioned variation depends on the constructions under investigation. According to Stefanowitsch (2003: 413), there are two types of constraints, viz. discourse-functional ones, related to “ways of structuring the information flow”, and semantic ones, which entails that the

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<sup>5</sup> While Aarts’ distinction between intra-categorical (“subsecutive”) and inter-categorical (“intersecutive”) gradience pertains to syntactic categories, I argue that these concepts can also be applied in the description of gradience between (schematic) constructions.

alternating constructions either occur with different lexical items, or differ on a more abstract semantic level. Typical examples of such alternations include the dative alternation (Goldberg 1995; Bresnan et al. 2007; Szmrecsanyi et al. 2017), the genitive alternation (Hinrichs and Szmrecsanyi 2007; Rosenbach 2014; Heller, Szmrecsanyi and Grafmiller 2017), the locative or *spray/load* alternation (Goldberg 1995; Perek 2015), the future marker alternation (Cacoulios and Walker 2009; Denis and Tagliamonte 2017) and the particle placement alternation (Gries 2003; Cappelle 2006, 2009; Grafmiller and Szmrecsanyi 2019). Based on his research on particle-verb constructions, Capelle (2006) makes a case for including the notion of “alternation” to the inventory of linguistic items stored in the construction. Analogous to the terms allophone/allomorph and phoneme/morpheme, Cappelle coins the terms “allostruction”, which refers to the “variant structural realizations of a construction that is left partially underspecified” (2006: 18), and “construc-teme”, the alternation which generalizes over the two or more allostructions (Perek 2015: 153). In contrast to other schematic representations in the constructional network, which generalize over “common meaning *and* form”, construc-temes are “generalizations of a similar meaning over distinct forms” (Perek 2015: 173). Building on Cappelle’s proposal and evidence from usage-based theories of language acquisition, Perek points out that including alternations as a separate level of representation can “capture the speakers’ awareness that some constructions are semantically similar and can be used as alternative ways to encode a particular category of meanings” (2015: 154).

Perek applies the concept of allostructions to two particular cases of syntactic alternation, viz. the dative alternation (*He gave Mary the book* vs. *He gave the book to Mary*) and the locative alternation (*John loaded hay onto the truck* vs. *John loaded the truck with hay*). In the case of the dative alternation, he shows how the construc-teme accounts for the event-level meaning (transfer of possession) shared by both constructions, while the constructional semantics of the allostructions themselves can be discerned on the basis of “a number of properties related to the recipient and theme arguments” (Perek 2015: 158). In the case of the locative alternation, both allostructions describe an event of caused change of location. In contrast to the dative alternation, the variation between locative constructions is not necessarily constrained by discourse-functional properties. Instead, the main differences between both constructions pertain to the *construal* of the event, with the caused motion construction (*load hay onto the truck*) zooming in on what happens with the theme of the event (*hay*), while the *with*-applicative (*load the truck with hay*) is mainly concerned with the effect of the action on the location (*truck*).

While the constructionist approach to linguistic variation has many benefits, the question remains to what extent it is also applicable to gerund constructions.

First of all, due to the lack of in-depth comparative studies of nominal and verbal gerunds, little is known about the degree of semantic overlap between both constructions, a necessary prerequisite for variation. In contrast to cases like the dative or genitive alternation, the two gerund types are typically not viewed as alternating constructions. If we are to model variation in the gerund system, then, we first need to examine whether there are sufficient grounds for considering nominal and verbal gerunds as constructions that enter into variation. On an abstract-semantic level, it will be argued in Part II that nominal and verbal gerunds, as in example (23), share the same event description, but depict different construals of that event. Based on that semantic argument, we can assume that gerunds at least have the *potential* to alternate.

- (23) a. They want to regulate cigarette smoking out of existence but to permit  
       *the smoking of marijuana*. (COCA)  
       b. Well, he didn't say he endorses *smoking marijuana*. (COCA)

Then, there are two further prerequisites for modelling variation (and intra-categorical gradience) in the gerund system: first, we need to discern what is precisely entailed in the different construal imposed by nominal and verbal gerunds. Chapters 4 and 5 will therefore offer a detailed functional comparison of both gerund types, relating differences in meaning to their respective formal differences. Secondly, we need to arrive at a clearer picture of the factors constraining the contexts in which nominal and verbal gerunds can be felicitously used. These factors may be related to their specific constructional semantics, but they could also be token-specific, since some verbs or token-level contexts may be biased towards one gerund type. These issues will be examined in Chapters 7 and 8.

## 2.4 Synthesis

Based on the previous sections, we can discern a number of tendencies that have prevailed in the study of gerunds. A first point of interest clearly is the lexicogrammatical status of the verbal gerund, which, formally hovering between a nominal and a clause, proved an intriguing topic for many linguists. The nominal gerund, in its turn, has mainly been studied in comparison to other derived nouns, with most attention being devoted to their (un)countable status and participant structure. The general category of gerunds, then, has been discussed in terms of its position within the larger network of *-ing* forms. These studies, however, mainly focus on the interaction between verbal gerunds and participles and thus typically neglect the most nominal end of the *-ing* cline.

Studies that take a more semantic or functional view on the English gerund can be grouped along three main axes. A first functional axis centers on the aspectual value of the *-ing* suffix, whereby the aspectual behavior of nominal and verbal gerunds is compared with that of other derived nouns and infinitives respectively. Again, there is no explicit comparison of nominal and verbal gerunds. A second group of studies do contrast the semantics of both gerund types and posit a distinction between action-referring nominal gerunds and action-referring or factive verbal gerunds. Claiming that the labels of action and fact do not accurately capture the particular functional niche of nominal and verbal gerunds, the third group takes a referential stance on the semantics of gerunds. While referential studies have yielded promising results in diachronic research, no synchronic comparison of the referential functioning of nominal and verbal gerunds has been undertaken yet.

While the manifest lack of comparisons of the Present-day English usage of nominal and verbal gerunds is by itself a reason for further research, there are a number of other issues that need to be dealt with. Strikingly, there is currently little to no cross-pollination between synchronic studies interested in the lexicogrammatical status of gerunds and those which assume a functional perspective. As was already noted in Heyvaert (2003: 41), “few attempts have been made to connect the lexicogrammar of the various nominalization types to the meanings which they realize”. Studying determination patterns, participant structure or even the clausal function of gerunds might however reveal a great deal about the ways in which they conceptualize situations. The same lack of overlap holds for studies that look at nominalizations in general. Whereas nominalization hierarchies acknowledge that nominalization is a gradient phenomenon that follows a certain hierarchy, they mainly focus on the formal aspects of nominalization. Cognitive-functional approaches, on the other hand, zoom in on nominalization as a matter of construal, but leave open the question of conceptual gradience. The functional side of nominalization is either conveyed as a unidimensional phenomenon (cf. Lehmann’s notion of typification), or it is filled in by a configuration of concepts that are often difficult to empirically assess. Langacker’s definition of reification, for instance, lacks the concrete elements which would allow to us to link particular functional properties to objectively verifiable linguistic elements. Finally, analyses of the Present-day English gerundive system need to account for the full range of gerund constructions and the variation that exists between them, thereby also recognizing intra-categorical gradience within the larger classes of nominal and verbal gerunds.

In sum, to adequately map out the usage profiles of nominal and verbal gerunds, we need a model that:

- (i) identifies the (functional) parameters that allow us to discern subtle differences in construal between nominal and verbal gerunds;
- (ii) recognizes the dynamic interaction of formal and semantic-conceptual features;
- (iii) provides us with a semantic-functional profile of nominal and verbal gerunds at different levels of abstraction, viz. the abstract nominal and verbal gerund prototypes at subschema level, their structural subtypes at meso-level and their concrete instantiations at the token- or micro-level. Doing so will allow us to map out inter-categorical as well as intra-categorical gradience (or, in Aarts' [2007] terms, intersective and subsective gradience);
- (iv) ultimately offers us a multidimensional hierarchy of the functional parameters that play a role in nominalization processes, as a counterpart to current formal nominalization hierarchies.

That such a model can offer new insights into the configuration of structurally similar constructions is shown by Rosenbach (2006), who presents a case study of descriptive genitives, such as the one in example (24). These constructions are contrasted with determiner genitives, as in (25), where the genitive has an identifying rather than a classifying function. On a structural level, the difference between descriptive and determiner genitives is, amongst others, reflected in the fact that the adjective *old* modifies the head (*magazine*) in the case of descriptive genitives, while it modifies the possessor (*man*) with determiner genitives.

(24) an old women's magazine

(25) the old man's book  
(Rosenbach 2006: 82)

However, as argued by Rosenbach, purely morphosyntactic diagnostics fail to recognize the gradience that exists within the category of *s*-genitives and between *s*-genitives and noun+noun sequences such as *master degree* (as an alternative to *master's degree*). By means of a number of semantic-conceptual features that are less rigid than morphosyntactic ones, such as referentiality, animacy and definiteness, she proposes a fine-grained cline from fully referential determiner genitives (*John's book*) to non-referential noun+noun compounds (*hotel lobby*). Crucially, she regards "clashes in the form/meaning mapping as the major source of gradience" (Rosenbach 2006: 111). Concretely, this means that gradience mainly arises from either ambiguity or variation between constructions. In the case of ambiguity,

one form may express various meanings. Thus, when saying “I went to a solicitor’s office”, the *s-genitive solicitor’s* may refer to a specific person or it may refer to solicitors in general, in which case it receives a non-specific or classifying reading. Gerunds can likewise be ambiguous and have two possible readings: the verbal gerund in example (26), for instance, is ambiguous between a specific and a generic reading, as it may refer to a specific action or to a generic type of activity. As will be argued in Chapter 4, generic situations or statements are characterized by time-stability, which is a property that is typically attributed to nouns (cf. Givón 1979: 320–322). In this respect, generic verbal gerunds could be argued to converge more towards the nominal end of the gerund cline than specific verbal gerunds. Gradience, then, is not only a matter of formal features, but can also be manifested at a semantic-conceptual level.

- (26) But what do you say to your critics who say, ‘Now you’re guilty of *doing what Hezbollah does*.’ (COCA)

A second type of gradience arises from variation, which entails that “meaning does not map deterministically to form” (Rosenbach 2006: 105), or, simply put, that one meaning may be expressed by multiple forms. In the case of Rosenbach’s case study, this is reflected in the fact that we often find an *s-genitive* construction such as *master’s degree* alongside a noun+noun construction like *master degree*, without a clear difference in meaning. This variation can, to a certain extent, also be witnessed with nominal and verbal gerunds. In example (27), the non-specific event *breaching barriers* can be expressed by means of a verbal gerund (27a) or a nominal gerund (27b).

- (27) a. Cloning the gene requires *breaching barriers that normally separate species*. (COCA)  
 b. By a quantum process called “tunneling,” which permits *the breaching of otherwise impassable barriers* (. . .). (COCA)

Importantly, ambiguity and variation provide semantic overlap or conceptual fluidity that does not readily map onto formal distinctions. It will therefore be important to reckon with such ambiguity and variation in our model. Including multiple semantic or functional dimensions into the model should, in addition, allow us to discern additional areas of semantic overlap and, correspondingly, more complex configurations of the constructions under investigation. A particular group of nominal and verbal gerunds may, for instance, function similarly on the level of reference, but impose different aspectual viewpoints on the event. A final remark made by Rosenbach – which she does not pursue, however –

involves the potential influence of context. She points out that the immediate context of a construction may serve to disambiguate its position on the cline, or do exactly the opposite. The adjective and preposition in example (26), for instance, are typical examples of an ambiguity-creating context, since the complement of *guilty of* can either refer to a generic type of crime or to a specific activity that has taken place in the past.

The instances of ambiguity and variation that can be found with nominal and verbal gerunds suggest that there is more gradience within the gerundive system than meets the eye. The analyses to be carried out in this study will thus be aimed at fully grasping the conceptual nature of nominal and verbal gerunds and the gradience that exists between them. This comprises:

- (i) identification of functional parameters: I will adhere to the two main functional axes that have figured in the study of English gerunds, viz. reference and aspect. The chapter on reference presents a multilayered model of referentiality which not only considers the referential subtypes found with gerunds (e.g. specific, non-specific, generic), but also the ways in which gerunds establish reference and the mental spaces they situate their referents in. In addition, it examines to what extent the pragmatic notion of (in)definiteness features in the status of nominal and verbal gerunds as discourse referents. The aspectual dimension presented in Chapter 5 is concerned with both the ontological aspect of gerunds (e.g. activity, accomplishment, state) and their viewpoint aspect (e.g. single vs. repetitive; bounded vs. unbounded). Crucially, these functional properties will be explicitly linked to the conceptual characterizations that have been given in the literature of nouns and verbs, which also tends to focus on referential and aspectual properties (cf. Table 1).
- (ii) dynamic interaction of formal and functional features: the findings of the two main functional analyses of Chapters 4 and 5 will be linked to the formal properties of nominal and verbal gerunds. Patterns of determination, structural complexity and “localizing satellites” (e.g. modification, relative clauses, cf. Rijkhoff 2002) are crucial in understanding the referential behavior of gerunds. Likewise, participant structure can influence the aspectual interpretation of a situation. Importantly, Chapter 7 views the semantics of gerunds from a collocational perspective and shows how contextual collexemes can steer the interpretation of specific instances of gerunds.
- (iii) identification of gerund prototypes and gradience in the gerund system: based on a quantitative analysis of the parameters discussed above, it will be possible to determine the preferred configurations of nominal and verbal gerunds, which can in their turn be generalized as abstract, schematic conceptual profiles. On an intermediate level, different mappings of formal and functional features help us identify subtypes of nominal and verbal

gerunds that may adhere to their prototypes to different extents (intra-categorical gradience). At the same time, we will identify particular mappings or “feature bundles” (Roberts 2010) that can be realized by both nominal and verbal gerunds (inter-categorical gradience). On a token level, then, we can assess the influence of collocational preferences on the choice for a particular gerund type.

- (iv) a multidimensional functional nominalization hierarchy: the identification of functional mappings in the gerundive system is also relevant to our understanding of broader processes of nominalization and (de)verbalization. Indeed, in her choice for either a nominal or a verbal gerund, the speaker is also confronted with a choice between a more nominal or clausal conceptualization of a situation. By designing a probabilistic model that quantifies the relative importance of different functional parameters in the choice for a nominal or verbal gerund, we can determine which conceptual dimensions prevail in nominalization processes, and which ones are only secondary.



## 3 Corpus data

### 3.1 Distribution of *-ing* forms in Present-day English

The term “gerund” is typically applied to a variety of constructions that are used to derive nouns from verbs by means of the *-ing* suffix. Among these constructions we can distinguish between two types: those that have the internal syntax of a clause and which thus realize their objects clausally, allowing for adverbial modification, voice distinction and secondary tense, as in examples (28)–(30), and those which have the internal syntax of a noun phrase. The latter constructions realize their objects periphrastically by means of an *of*-phrase and can occur with determination and adjectival modification, as can be witnessed in examples (31)–(35). Gerunds like those in (28)–(30) will be called verbal gerunds, while those in (31)–(35) will be labelled nominal gerunds. As can be observed in the examples, both nominal and verbal gerunds display a variety of subtypes. With verbal gerunds, this variation largely depends on the subject, which is either left out, as in (28), occurs with genitive case marking, as in (29), or with oblique or common case, as in (30). Formal differences within the category of nominal gerunds mainly relate to the type of determination they combine with. In this study, most attention will be devoted to definite nominal gerunds (31), bare nominal gerunds (32) and indefinite nominal gerunds (33), but the datasets also include instances of nominal gerunds that combine with demonstratives and indefinite quantifiers, as in examples (34) and (35).

- (28) He seemed quite unperturbed by her behaviour, by *being walloped across the face*, and she watched in amazement as he calmly took his own glass and sat in the chair opposite. (BNC)
- (29) In the unlikely event of *our ever having a socialist Government again* could not we expect to return to those appalling figures of industrial anarchy? (BNC)
- (30) I was right about *him having flipped*, though. (BNC)
- (31) Does *the replanting of Redwood* change anything much? (BNC)
- (32) The Christianization of early medieval society in depth required *constant teaching of Christianity*, and that required organization. (BNC)

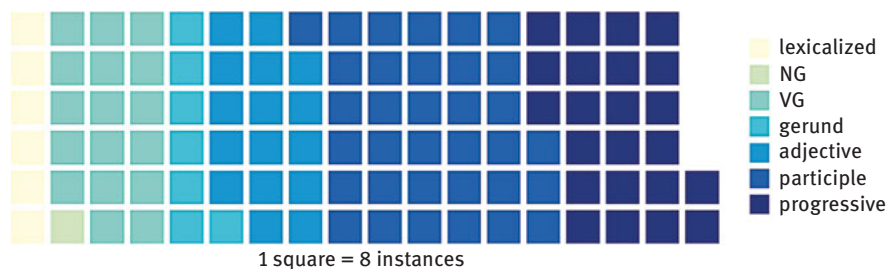
- (33) At last, with *a little shaking of his arm*, and thrice his head waving up and down, he raises a sigh so piteous and profound that it does seem to shatter all his bulk and end his being. (BNC)
- (34) Language usage contributed to *this slackening of clerical resistance*. (BNC)
- (35) Did he receive you well? ROS: Most like a gentleman. GUIL: (Returning in time to take it up) But with *much forcing of his disposition*. (BNC)

Gerunds can be situated within a broader network of *-ing* forms, which also includes, for instance, participial *-ing*. Crucial to our understanding of this constructional network are, first and foremost, the constructions' productivity and frequency (see, amongst others, Bybee 1985, 2006; Barðdal 2008; Boas 2013). Both issues, however, have hitherto been overlooked in comparative studies of nominal and verbal gerunds. In order to acquire a better understanding of the position of gerunds within the larger category of *-ing* forms, I will start this chapter with an overview of the distribution of various *-ing* forms in a random sample of 1,000 lexemes ending in *-ing* from the 1990–1994 subperiod of the Corpus of Contemporary American English (search string [\*ing]). Various types of *-ing* forms were thereby extracted, including nominal gerunds (36a), verbal gerunds (36b), progressives (36c), adverbial participles (36d), adjectival participles (36e), lexicalized *-ing* nominalizations (36f) and *-ing* forms without verbal roots (36g). I also discerned a general category of gerund forms, which comprised instances that were either ambiguous between a nominal or verbal gerund interpretation due to their bare form (36h), or which had overt nominal marking but not an *of*-phrase, one of the criteria for nominal gerunds, as in (36i).

- (36) a. Huge video screens behind her show volcanic eruptions, gushing torrents, *the fracturing of the earth's first continent*. (COCA) [nominal gerund]  
 b. I place a couple of workers in charge of *watching the strange object*, alternating day and night. (COCA) [verbal gerund]  
 c. All right, Trish. Have you been *listening*? (COCA) [progressive]  
 d. They're living at home and this one mosquito, *carrying* a briefcase – the male mosquito, I guess – came home and said something (. . .). (COCA) [adverbial participle]  
 e. "Be careful with that thing," he yelled, then vanished back into a *swirling* cloud of vapor. (COCA) [adjectival participle]  
 f. But the gap between *the building* and a surrounding concrete enclosure allows only 26 cm of movement. (COCA) [lexicalized nominalization]

- g. His favorite place to pray is in the bathroom early every *morning*. (COCA) [no verbal root]
- h. Unlike many vegetables, eggplant is not really harmed by *overcooking*, whereas under cooking results in a chewy, bitter flavor. (COCA) [ambiguous gerund]
- i. *The constant surging* and slowing reminded Lucas of the airplane's motion. (COCA) [gerund without *of*-phrase]

After excluding the forms without verbal roots, I was left with 849 instances of *-ing* forms. Figure 3 visualizes the proportions of the various constructions belonging to the *-ing* network in the sample. As can be observed, gerunds in general (NG, VG, gerund) make up only 25% of the total number of *-ing* forms, with verbal gerunds outnumbering nominal gerunds by 17 to 1.<sup>6</sup> The adverbial participial use of *-ing*, which includes *-ing* forms functioning as free adjuncts or absolutes, constitutes the largest group of *-ing* forms overall. This is followed by progressive *-ing*, which represents 22% of the *-ing* forms. Verbal gerunds and participials functioning as adjectives are the third- and fourth-largest groups of *-ing* forms, followed by the more general gerund category, which consists of ambiguous *-ing* forms and *-ing* forms with nominal marking but without *of*-phrase.<sup>7</sup> Lexicalized *-ing* forms constitute 6% of all *-ing* forms, while nominal gerunds clearly represent the smallest category in the *-ing* network.



**Figure 3:** Distribution of (de)verbal *-ing* forms in a sample of 849 instances.

<sup>6</sup> More specifically, I found 138 verbal gerunds in the sample, as opposed to 8 nominal gerunds.

<sup>7</sup> Of the 61 instances in the gerund category, 50 are truly ambiguous, while 11 have overt nominal markers (e.g. adjectives or determiners, but no *of*-phrase).

Figure 3 leaves us with a number of questions. Since verbal gerunds have clearly become the default construction in the larger gerund category, one might wonder whether nominal and verbal gerunds still lend themselves to a comparison, or whether we are comparing apples and oranges in this study. Based on raw frequencies, it could be argued that there is no more paradigmatic attraction between Present-day English nominal and verbal gerunds than there is between, say, verbal gerunds and lexicalized *-ing* nominalizations. However, I suggest that the present comparison of nominal and verbal gerunds can be motivated in three ways.

Firstly, the historical link between nominal and verbal gerunds prompts further study into the functional niches that are established by both gerund types. The diachronic evolution of the gerund system has been characterized by a complex interplay of competition and attraction between nominal and verbal gerunds as well as other neighboring constructions, such as the present participle (Fanego 2004; De Smet 2008; De Smet 2013; Fonteyn and van de Pol 2016; Fonteyn 2019). Verbal gerunds initially competed with bare nominal gerunds, which had a profile that was functionally similar to the first instances of verbal gerunds (De Smet 2008). Both gerund types could, for instance, be used to refer to newly introduced indefinite situations:

- (37) a. Than anone they harde *crakyng* and *cryyng* of thunder.  
       ‘Then suddenly they heard cracking and crying of thunder.’  
       (a1470, LEON0.3 < PPCME2, Fonteyn 2016: 107)
- b. He hath then a busie worke I say, to bringe his flocke to a ryght fayth and then to confirme them in the same fayeth, Nowe castynge them downe with the lawe, and with threateninges of God for synne. (. . .) Nowe weedinge them, by, *tellinge them their faultes*, and makynge them forsake synne. (1549, PPCME, De Smet 2013: 137)

Later on, the verbal gerund developed additional uses which also allowed it to refer to familiar referents in discourse (De Smet 2008; Fonteyn 2016; also see Chapter 4). As argued in Fonteyn (2016: 35), this “referential shift” led to greater functional overlap with the definite nominal gerund. Yet, despite the verbal gerund’s spectacular rise in frequency from Early Modern English onwards, definite nominal gerunds – and even bare nominal gerunds – have managed to survive into Present-day English without undergoing drastic changes in their functional profiles (Fonteyn 2019). Since the competition between nominal and verbal gerunds has neither led to the replacement of the former gerund type nor to a clear-cut division of labor, Fonteyn (2019) posits that there are also forces of attraction between both gerund types. Building on the notion of

“degeneracy” (Van de Velde 2014), which entails that a language system can rely on multiple, “redundant” strategies to express a single function, Fonteyn claims that nominal and verbal gerunds are to a certain extent still considered as closely related forms to the language user. This, she argues, explains why nominal gerunds have not fully developed into non-eventive, semantically entrenched nominalizations and why verbal gerunds have retained their similarity to abstract uncount nouns in certain contexts (Fonteyn 2019; cf. Chapter 4 on reference for a more detailed discussion).

Secondly, the different proportions of nominal and verbal gerunds in Present-day English do not prevent them from competing in certain contexts of usage. One point of interest, therefore, are the constraints on variation between nominal and verbal gerunds: which contexts, lexical items or functional features are particularly “hostile” to certain gerund types and thus preempt competition in the gerund system, and which contexts of usage more readily allow for competition between nominal and verbal gerunds? Thus, while Part III takes a more variationist perspective on nominal and verbal gerunds, it does not aim to represent nominal and verbal gerunds as two competing constructions of equal value. Rather, it wishes to offer a more fine-grained picture of the areas of overlap and variation between nominal and verbal gerunds, where inter-categorical gradience may arise, and of the areas that constitute the functional niche of each gerund type, where variation is less likely to be found.

Finally, while frequency effects arguably play an important, if not decisive, role in contexts where speakers are offered a choice between multiple constructions, other processing factors need to be taken into account as well (Pfänder and Behrens 2016: 7–8). One such factor is salience, a property of linguistic elements which centers on the notion of “prominence”.<sup>8</sup> By means of various linguistic

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<sup>8</sup> In sociolinguistics, salience can pertain to both the ease with which a listener picks up a certain variant, as well as the speaker’s awareness of a certain linguistic feature (Hickey 2000: 57; MacLeod 2015). Dialectological research maintains that salience mainly arises in contexts of dialect contact, with salient variables entailing an element of surprise for speakers of different dialects (Rácz 2012, 2013). These definitions differ from the ones offered in Cognitive Linguistic research, where a distinction is made between cognitive salience, i.e. the mental activation of a certain entity in discourse, and ontological salience, which relates to an entity’s prominence and permanence in the world (Schmid 2010). In this context, entities are either inherently prominent (e.g. human vs. non-human entities) or salience can be achieved by particular linguistic strategies which direct the listener’s attention to parts of an utterance (Talmy 2010: 264; Tomlin and Myachykov 2015; Langacker 2015: 127). There is some discussion as to how frequency and salience are related. Within Cognitive Linguistics, it is assumed that highly frequent items carry the most cognitive salience, since they represent entrenched linguistic units that are easily activated (Langacker 2015: 127). Dialectological research, on the other hand, argues that especially

strategies, the language user can assign “different degrees of salience to the parts of an expression” (Talmy 2010: 264, also see Mulkern’s 2003 notion of imposed salience). From this point of view, the choice between a nominal and verbal gerund is not just driven by the frequency of both constructions, but also interacts with the speaker’s subjective construal of a situation. In some cases, then, the choice for a particular linguistic strategy, such as overt definiteness marking, may override frequency effects.

## 3.2 Data sources

The data used in this study were extracted from two corpora of contemporary English, viz. the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA). Both BNC and COCA are large, well-balanced corpora that are freely available online. The Corpus of Contemporary American English was created by Mark Davies at the Brigham Young University (BYU), while the British National Corpus was originally created by Oxford University press and later made available through the same BYU online interface. Of the two corpora, COCA is the largest, comprising over 520 million words in 220,225 texts from 1990–2015. It is still updated regularly. The BNC, on the other hand, only covers the period 1980–1993. To ensure maximum comparability between the data extracted from BNC and COCA, I only used the 1990–1994 subperiod of the latter corpus. The choice for British and American English was partly motivated by earlier claims on regional differences in the use of verbal gerunds with genitive subject (*his leaving the room*), which is said to be more acceptable in American English than in British English (Hudson 2007: 202). This claim could not be confirmed on the basis of my corpus data, however.<sup>9</sup>

The two corpora have a slightly different genre distribution. COCA, which is also used as a diachronic monitor corpus, has an even distribution of 5 genres per year, viz. spoken, fiction, popular magazines, newspaper and academic genres, each making up 20% of the total number of texts. The BNC has a smaller spoken component (10%), and in addition to the written genres of fiction, popular magazines, newspaper and academic texts, it also comprises a number of non-academic and miscellaneous texts. The latter include biographies, emails, instructions etc., while the former mainly consist of prose on topics like arts,

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infrequent phenomena are salient to the language user, since an unexpected variant can index social differences (Rácz 2012, 2013: 9; also see Ruette, Ehret and Szmrecsany 2016).

<sup>9</sup> Moreover, as will be shown in Chapter 8, the speaker’s choice for a nominal or verbal gerund is not influenced by the variety of English (British or American) that is spoken or written.

engineering or medicine. Table 2 gives an overview of the genre distribution in both corpora during the periods investigated in this study.

**Table 2:** Genre distribution in BNC and COCA.

Genre	BNC (1980–1993)		COCA (1990–1994)	
	# words	proportion	# words	proportion
Spoken	9,963,663	10%	21,967,915	20%
Fiction	15,909,312	17%	20,258,031	20%
Magazine	7,261,990	7%	21,269,305	20%
Newspaper	10,466,422	11%	20,441,781	20%
Academic	15,331,668	16%	20,062,098	20%
Non-academic	16,495,185	17%		
Miscellaneous	20,835,159	22%		
<b>Total</b>	<b>96,263,399</b>	<b>100%</b>	<b>103,999,130</b>	<b>100%</b>

### 3.3 Compilation of datasets

Most analyses in this study were carried out on a set of 1,600 gerunds, comprising 800 nominal gerunds and 800 verbal gerunds. Each dataset consists of 400 instances from BNC and 400 instances from COCA. Since both corpora are made available through the same interface, selection procedures were similar for BNC and COCA.

While both corpora are part-of-speech tagged, I did not make use of this tagging in the extraction of nominal gerunds, since especially bare nominal gerunds are sometimes wrongly tagged as verbs rather than nouns. Instead, I searched the corpus for all words which ended in *-ing* and were followed by an *of*-phrase, using the search string “\*ing of”. One may question whether it was necessary to limit the search to instances that contained an *of*-phrase, since this also excludes gerunds like the following:

- (38) a. On Wall Street today, stocks closing lower in a day of *sluggish trading*.  
(COCA)  
b. Now *the killing in Cambodia* that never ends. (COCA)

In both examples, the presence of nominal elements like the adjective and the definite article indicate that we are dealing with nominal *-ing* forms. Yet, it could be argued that the valency reduction in these instances downplays their eventive

semantics. Thus, in order to find the right balance between finding forms that are unambiguously nominal while at the same time still eventive, I decided to include only those nominal gerund forms which contained at least one participant.

A number of criteria were used for the random selection of nominal and verbal gerunds, the selection of the former being somewhat more restricted than the latter. The main concern with nominal gerunds was the exclusion of lexicalized and entrenched units which have largely lost their eventive meaning and acquired a specialized semantics. Two criteria were used to exclude such *-ing* forms: Firstly, I checked whether the *-ing* form denoted more than just “the activity of [verb]” in the particular context it was found in. If it did, the example was not included in the dataset. In case of doubt, the Oxford English Dictionary was consulted. Secondly, if the form displayed productive plural marking (i.e. occurring more than once or twice with plural marking elsewhere in the corpus), it was excluded as well. Some clear illustrations of lexicalized *-ing* forms are listed in example (39):

- (39) a. They become history and art, sunny and small like *an English drawing of the old school* (. . .). (BNC)  
 b. She started flicking through the messages, most of them in *the handwriting of Mrs Whittaker*, the secretary of the English department. (BNC)  
 c. The conference began on a rainy morning during the last week of March 1923 in *the somewhat unlikely setting of the drawing room*. (BNC)

In some cases, one and the same form can express an entrenched as well as an eventive meaning. Consider the two instances of *opening* in example (40): in (40a), the semantics of the *-ing* form has shifted from literally opening something to a more metaphorical sense of opening, referring to the occasion on which the exhibition is inaugurated. In (40b), on the other hand, *opening* has retained its eventive semantics, which can also be deduced from the adjective *gradual* with which it combines. Thus, examples like (40b) were retained for the analysis, while instances as in (40a) were not.

- (40) a. Usually the committee of the Salon appointed a hanging committee which was automatically and unanimously approved by the general assembly at its annual meeting held a few weeks before *the opening of the exhibition*. (BNC)



- b. The low incidence of early ventricular fibrillation is probably due to *a more gradual opening of the vessel than was once thought*. The incidence of pericarditis and cardiogenic shock is low with increasing salvage of myocardium contingent upon the opening of the vessel. (BNC)

Verbal gerunds were extracted using the query “\*ing.[v\*]”, thus searching the corpus for all verb forms ending in *-ing*. Due to the clausal syntax of verbal gerunds, tokens are less likely to be mistakenly tagged as nouns. Moreover, the overall frequency of correctly tagged verbal gerunds compensated for the few instances that were not picked up by the search string. One point of concern, however, were the instances of verbal gerunds combining with a genitive subject. The presence of a possessive pronoun can mislead the automatic tagging, thus resulting in the instance being tagged as a noun rather than a verb. The possible scale of this problem was assessed by checking the tagging of a number of highly frequent “POSS-ing” constructions in the COCA corpus, such as *our being*, *his having*, *my going* and *their leaving*. Overall, the verb-tagging outnumbered the noun-tagging, with instances of, amongst others, *having* and *doing* preceded by a possessive not occurring with a nominal tag. With some possessive *-ing* constructions, however, quite a few instances turned out to be tagged as nouns. The search string “[pos-possessive] leaving.[n\*]”, for instance, had 229 hits, as opposed to 105 hits tagged as verbs. However, closer scrutiny revealed that those instances that were tagged as nouns were mostly truly ambiguous, as illustrated in examples (41a) and (41b). Instances like those in (42a) and (42b), on the other hand, display more clausal syntax and turned out to have been tagged as verbs. We can thus assume that the effects of inaccurate tagging on the dataset are negligible.

- (41) a. This pained him more than if she had violently objected to *his leaving*. (COCA)  
 b. *His going* triggered further questions about how the United Way does business and about the state of organized charities in general. (COCA)
- (42) a. Ronak’s illness being a direct result of *my leaving him to take the exam and pursue my ambition*? (COCA)  
 b. I had no idea of *your going out so early*, and I’ve all your jewellery lying soaking. (COCA)

Gerunds occurring without any additional complements or modifiers, i.e. bare *-ing* forms, were not included in the dataset because of their inherent ambiguity. This includes bare *-ing* forms such as the ones in (43a) and (43b), which were tagged as “verb” and “noun” respectively in COCA.

- (43) a. These public meanings define stages of *caregiving* and tend to label as deniers or martyrs those who do not fit the current definition of healthy adjustment. (COCA)  
 b. That was the chain of events in a frantic day of *oil trading*. (COCA)

I did, however, include instances of verbal gerunds without overt markers of clausal syntax. From a diachronic perspective, these gerunds may be considered ambiguous between nominal and verbal gerunds. Yet, from a synchronic perspective, it can be argued that, due to the overall frequency of verbal gerunds, a clausal reading of these examples is the default (also see Biber et al. 1999: 67). Instances such as (44a) and (44b) were thus added to the dataset of verbal gerunds despite their lack of clausal markers:

- (44) a. *Flying in open spaces* is ideal, but among buildings can be horrific. (BNC)  
 b. Leon sucked his way carefully round his host's person and joined him in *gazing at the red plastic blob*. (BNC)

Finally, some contexts did not allow for a clear disambiguation between participles and verbal gerunds. *-ing* clause complements of aspectual verbs, as in example (45a) for instance, were excluded (cf. Huddleston and Pullum 2002: 1221; De Smet 2010: 1179), as well as *-ing* forms following verbs of perception, as in (45b). *-ing* forms occurring with *since*, *after* and *before* were likewise excluded from the dataset, since the latter can function both as prepositions (e.g. *after the party*), in which case they are followed by a gerund, or as subordinators (*after he took the bus*), which are followed by a participle. In order to ensure comparability between the two datasets, these contexts were also excluded with nominal gerunds.

- (45) a. He began *writing on the cheque* again. (BNC)  
 b. I saw them *putting on pale blue underpants*. (BNC)  
 c. Alton Lawrence was shot soon after *leaving a family birthday party on Tuesday night*. (BNC)

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## **Part II: A multifunctional perspective**

By assuming a multifunctional perspective, I wish to shed more light on the functioning of Present-day English nominal and verbal gerunds. I will do so on the basis of the two main functional dimensions that have prevailed in functionally-oriented studies of English gerunds, viz. reference and aspect. Each domain relates to a different part of the functional profile of nominalizations: the act of reference is typically viewed as one of the main functional motivations behind processes of nominalization, while aspectual features represent the characteristics of the situation underlying the nominalization structure. While both phenomena are generally well-studied, a systematic comparison of nominal and verbal gerunds with respect to the functional axes of reference and aspect is still lacking. The aims of the following chapters are threefold. Firstly, by applying the analyses to a large set of nominal and verbal gerunds, I aim to gain more insight into the functional niches of each gerund construction and the most prominent differences that exist between them. In a next step, these observations will be viewed in light of the gerund's formal features, examining how the structural make-up of a construction influences or interacts with its functional profile. In doing so, I aim to arrive at a better understanding of the functional side to formal degrees of "nouniness" (Ross 1973). From a more theoretical point of view, finally, I will discuss how a more clausal construction like the verbal gerund can be situated within the nominal domain of reference and, similarly, to what extent nominal gerunds can still express the same range of aspectual features as verbal gerunds.

The referential and aspectual analysis of nominal and verbal gerunds form the contents of Chapters 4 and 5 respectively. The multifunctional perspective assumed in them will be further exploited in the case study presented in Chapter 6, which zooms in on the diachronic rise and synchronic usage of an underresearched type of nominal gerund, viz. the indefinite nominal gerund.

## 4 Reference

In this chapter, I focus on how the situations that nominal and verbal gerunds refer to are conceptualized as deictic expressions grounded in the speech event.<sup>10</sup> In the strictest, logical sense of the word, reference involves a mapping between a linguistic element and an entity in the *real world* (Givón 2001: 438; see, amongst others, Frege 1949; Russell 1905; Strawson 1950; Carnap 1959; Searle 1969). Conceptualist approaches to language, however, emphasize that the referents of referring expressions are things which are *construed* by the language user and which reside in the “Universe of Discourse” (Givón 2001: 438) or in “mental spaces” (Taylor 2002: 194). From this point of view, reference is essentially a communicative act through which the speaker can “impose (. . .) construals on [his] audience” (Brisard 2002: xix; Radden and Dirven 2007: 88). By taking a referential stance towards the semantics of gerunds, we should, in other words, be able to bridge the gap between the formal referential strategies used by the speaker and the “conceptualization that a speaker entertains” (Taylor 2002: 21).

To adequately capture the referential functioning of gerunds we first have to design a referential framework that can account for deverbal nominalizations, which deviate from the prototypical NP referent in that they refer to events rather than things. I will make use of some of the basic concepts introduced in Cognitive Grammar, where the notion of “epistemic grounding” will allow us to draw parallels between nominals and finite clauses (Section 4.1). These concepts have found their way into synchronic and diachronic studies of the referential status of gerunds, which will be discussed in Section 4.2. As will be shown in Section 4.3, however, current referential models insufficiently tease out the referential categories that determine the discursive functioning of nominal and verbal gerunds and, as a result, overlook fundamental aspects of their distinct constructional profiles. I therefore propose a multilayered model of referentiality, which pays particular attention to the notions of specificity and definiteness, describing more accurately what they stand for and how they contribute to the referential functioning of linguistic units. I will, in addition, critically examine the role that the concept of “mental spaces” can play in the discussion of referentiality by looking into the assumption that the distinction between specific and non-specific reference is paralleled by a distinction between “actual” and “virtual” mental spaces (Fauconnier 1985; Langacker 1987a, Langacker 2009). While this may hold true for prototypical noun phrases, I will argue, mental spaces function differently in the context of

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<sup>10</sup> The research presented in this chapter has also appeared in Maekelberghe (2018) and is partly based on Fonteyn, Heyvaert and Maekelberghe (2015).

deverbal nominalizations, where the notions of “actual” and “virtual” space acquire an existential dimension. Section 4.4, then, presents the results of the corpus-based analysis of nominal and verbal gerunds and describes how the different layers of the referential model are realized with each gerund type. While the better part of this chapter focuses on determination and relations of control as referential strategies, Section 4.5 zooms in on other linguistic elements which may serve as “reference-points” or “localizing satellites” to the referring expression (Langacker 1993, 2001; Willemse 2005; Rijkhoff 2002). It moreover addresses the claim that the internal syntax of verbal gerunds is typically more flexible and “more strongly [favours] complex patterning than that of nominal gerunds” (De Smet 2008: 91). In Section 4.6, then, I will draw some conclusions regarding the referential and conceptual differences between nominal and verbal gerunds, which will allow me to discern a first cline of functional gradience within the gerund system.

## 4.1 Towards a referential framework

### 4.1.1 Reference as nominal or clausal epistemic grounding

Traditionally, the concept of reference has been tied up with the analysis of noun phrases and their identifiability to the hearer: as Huddleston and Pullum (2002: 400) put it, “[r]eferential expressions are generally NPs”, while verbs and adjectives, rather than being referential, realize denotation, denoting a relation between referents (verbs) or a property of a referent (adjectives). While in Cognitive Grammar too, we find the notion of reference primarily in the context of the discussion of noun phrases, Langacker’s functional account of the noun phrase and clause in fact suggests a much broader interpretation of it. In Langacker (1987a: 126), both the noun phrase and the (finite) clause are described as “deictic expressions”, which can be defined as structures that “include (. . .) some reference to a ground element within (. . .) [their] scope of predication”, the ground involving the speech event, its participants and its setting (Langacker 1987a: 126). Noun phrases in this perspective differ from clauses not so much in being referential (they both are), but in precisely which ground element they select as reference point. They will typically link up the designated instance to the speech participants, viz. through predications of definiteness (or identification to speaker and hearer) and proximity to the speaker (e.g. through the use of *this* or *that*). Finite clauses, on the other hand, “contain epistemic predications that locate the designated process (. . .) typically with reference to the time of speaking” (Langacker 1987a: 126–127). Clausal grounding elements are especially tense and modal verbs, but also the subject has been argued to

contribute to clausal deixis, i.e. through so-called “person deixis” (Davidse 1997). Reference defined as epistemic grounding or deixis thus involves the ground both as conceptualizer (i.e. the speaker) and as object of conceptualization, i.e. “a ground element must be included within the scope of predication” (Langacker 1987a: 128).

Nominals are not only said to differ from finite clauses in terms of which aspect of the ground or speech event that they refer to (i.e. the speech participants in the case of NPs and the time of speaking in the case of finite clauses), but also with respect to their fundamental epistemic concerns. In the case of nominals, which prototypically refer to objects, *identification* is the speaker’s primary concern since “the default expectation is for many instances of a given type to exist simultaneously and to continue existing indefinitely” (Langacker 2009: 166; also see Croft 1991: 118). The main effect sought by the speaker will therefore be situated at the level of discourse interaction when the speaker attempts to direct the hearer’s attention to the intended referent. For the events designated in finite clauses, it is not so much identification that is at issue, but *existence* (occurrence). The default expectation with events is that they are transient and, consequently, “the simultaneous existence of multiple instances (of an elaborated type) is seldom a significant concern” (Langacker 2009: 166).

The grammaticized grounding systems in nominals and clauses, it is argued, have evolved to deal with their different epistemic concerns (Langacker 2009: 166). In the construal of a nominal referent as in the example *the cat is sleeping*, the lexical noun *cat* by itself describes a certain type of animal and thus limits attention to all instances of this particular type, but fails to single out a referent, while the full NP *the cat* profiles a grounded instance of the type denoted by the lexical noun by signaling to the hearer that the referent can be retrieved from episodic memory. In other words, noun phrases generally take nominal grounding elements – a category that largely coincides with the class of determiners, but also includes demonstratives and possessives (*that/my cat*) (Langacker 2009) – to select their referent from the large range of candidates. As such, NPs differ from prototypical clauses, which require a different grounding mechanism. Clauses, which typically profile events, are not grounded by means of determiners or other elements signaling their identifiability, but by means of tense, the optional use of modals and a specified subject to establish when the event occurs or whether it occurs at all. In the case of non-finite clauses, which are atemporalized and typically lack such grounding and (in most cases) a specified subject (Langacker 2009: 300), grounding is established indirectly through their connection with the main clause or the immediate context in which they reside. For instance, a non-finite clause such as *to build a house* by itself only profiles an event in a generalized way and does not establish

a referent. However, by connecting it to a larger matrix clause, as in *I managed to build a house*, the non-finite clause is placed in (our conception of) time and reality. It receives a specified subject *I* through a control relationship with the matrix clause, and a temporal location in the past through the finite form of *manage*, which in the past tense implies that the event has taken place successfully.

#### 4.1.2 Reference and reality

Both the acts of nominal and clausal grounding, Langacker argues, can be viewed as part of our “ongoing effort to build up a coherent conception of ‘the world’” (2009: 201). Thus, by epistemically grounding a nominal or clause, the speaker wishes to incorporate an event or object in her – or the hearer’s – conception of reality. This notion of reality, however, is interpreted somewhat differently in the context of nominals and clauses. In the case of clauses and events, reality comprises, rather straightforwardly, all events that are *accepted by the speaker* as having occurred (Langacker 2009: 173). Thus, when the speaker says that *Alice didn’t buy a cat*, even though she really might have, this particular event is not (yet) incorporated in the speaker’s conceived reality. Instead, it belongs to an “elaborated reality”, which contains occurrences that can be imagined as being included in reality, but are not (yet) accepted as such by the speaker (Langacker 2009: 160). In addition to markers of negation, elaborated reality can also be signaled by modal verbs (*Alice will/should buy a cat*) or interrogatives (*Did Alice buy a cat?*). Importantly, then, the distinction between real and unreal (or “actual” and “virtual”) events depends on the speaker’s assessment of their *existence*.

The distinction between basic or conceived reality on the one hand and elaborated reality on the other is largely drawn from Fauconnier’s (1985) seminal work on mental spaces. Mental spaces represent cognitive constructs that are set up by a variety of linguistic elements during thought and/or discourse in order to facilitate local understanding (Fauconnier 1985: 16, Fauconnier 2010: 351; Sweetser and Fauconnier 1996: 8). Fauconnier distinguishes between base space, which describes the current situation of the discourse participants, and mental spaces which are constructed through space builders. In the utterance *I am looking for John – Maybe he has left already*, for instance, the first sentence represents the base space, while the second sentence represents a possibility space that is created by the adverb *maybe*. While the theory of mental spaces can be applied to various domains, it is especially relevant in the study of referentiality. As Fauconnier (1985: 158–159) argues, mental spaces are an “important intermediate process” in relating linguistic structures with their referents and can account for the fact that speakers are able to conceptualize elements without truth value.



The interpretation of reality levels and mental spaces is somewhat more complex in the case of nominals. Both Fauconnier and Langacker apply the notions of “real” and “unreal” or “actual” and “virtual” to the distinction between noun phrases with specific and non-specific reference. It is typically illustrated by means of the following examples:

- (46) a. He wants to marry a Norwegian. She is tall and blonde.  
       b. He wants to marry a Norwegian. She has to be tall and blonde.  
       (Langacker 2009: 94)

In example (46a), the indefinite noun phrase *a Norwegian* receives specific reference, whereas it is non-specific in example (46b). The difference between both entities, according to Fauconnier, lies in the fact that in (46a), *a Norwegian* is mentally connected to the referent of *he*, which is part of the base space or actual space. In (46b), on the other hand, the same nominal only exists in a “desire space, not corresponding to any actual individual” (Langacker 2009: 94). Thus, in the case of nominal grounding, reality only comprises those entities which are identifiable to both the speaker and hearer. As is illustrated in example (46), the distinction between actual and virtual entities is not the same as the distinction between definite and indefinite noun phrases. Definite nominals, Langacker argues, can also refer to virtual entities, such as the noun phrase *the winner* in *The winner will receive a very nice trophy*, which describes a role rather than an identifiable person (Langacker 2009: 94). What distinguishes indefinite nominals from definite ones, however, is that the latter often “presuppose identification” by virtue of the presence of the definite article only (Langacker 2009: 178, 120), while indefinite noun phrases depend on contextual information to determine whether or not they can be connected to the reality of speaker and hearer.

While Langacker’s account of grounding and reality will prove useful in the remainder of this chapter, it has mainly been applied to prototypical nominals and clauses. As I will show, nominalizations in general and gerunds in particular pose a challenge to some aspects of his analysis. I will scrutinize the limitations of some theoretical concepts by discussing previous studies on the referential status of nominal and verbal gerunds in the next section, after which I present a slightly adapted version of the referential framework in Section 4.3.

## 4.2 Gerunds as referring expressions: A state of the art

Previous research into the referential status of gerunds can be divided into two groups. Firstly, there are a number of synchronic studies which are mainly

concerned with the verbal gerund, examining the extent to which verbal gerunds are comparable to other types of noun phrases. Their main concern is to show how the referential functioning of verbal gerunds, despite their formal hybridity, is still similar to that of other types of prototypical noun phrases. More recently, a second group of studies has examined the referential behavior of nominal and verbal gerunds from a comparative and diachronic point of view, arguing that both gerund types have developed their own referential niche over time. Their aim is to show how verbal gerunds have partly moved away from the nominal system of referentiality. I will argue, however, that both approaches leave some aspects of the gerund's referential profile unaddressed. More specifically, much remains to be said about the relation between verbal gerunds and the notions of (in)definiteness, as well as the application of Langacker's levels of reality to both nominal and verbal gerunds.

One of the first referential analyses of gerunds was offered in Schachter (1976), who focused on the Present-day English verbal gerund. To support his claim that verbal gerunds display the underlying structure of ordinary noun-headed noun phrases (Schachter 1976: 206), Schachter compares the semantics of verbal gerunds with that of three subtypes of noun phrases with common noun heads. A basic distinction is thereby made between verbal gerunds with a possessive subject, as in (47), and those which are subjectless, as in (48).

(47) Mary's having left surprised me. (Schachter 1976: 212)

(48) I recommended going to the beach. (Schachter 1976: 216)

Possessive verbal gerunds are, according to Schachter (1976: 213), semantically similar to definite noun phrases, as they typically refer to specific, presupposed events. Bare or subjectless verbal gerunds, on the other hand, are compared to uncount nouns and plural count nouns, as in (49)–(50). Depending on the context, subjectless verbal gerunds are said to establish either generic reference, referring to a class of entities as in (49) and (51), or specific reference, referring to an instance of that class, as in (50) and (52).

(49) *Milk* does something for every body (*sic*). (Schachter 1976: 214)

(50) Jane served *beans* for supper last night. (Schachter 1976: 214)

(51) Going to the beach is enjoyable (Schachter 1976: 215)

(52) I enjoyed going to the beach yesterday (Schachter 1976: 215)

The tripartite distinction between possessive verbal gerunds and specific and generic determinerless gerunds was further elaborated in Heyvaert (2008), who draws additional parallels between verbal gerunds and ordinary noun phrases and more explicitly integrates the concept of (in)definiteness into her referential analysis. The main deviation from Schachter's work can be found in her analysis of specific verbal gerunds, which are claimed to be mostly definite in reference (Heyvaert 2008: 68). Two types of specific definite verbal gerunds are distinguished: possessive verbal gerunds, as in (47), which are compared to ordinary definite common nouns, and specific bare verbal gerunds, as in (52), which are said to denote “unique individual, and therefore definite, instances of the nominalized process” (Heyvaert 2008: 68). Unlike Schachter, who equates the latter category with uncount or plural count nouns with specific reference, as in (50), Heyvaert claims that these verbal gerunds “follow the proper name strategy”, as they need “no explicit determiner [to signal] the definite status of the NP” (2008: 68). A small number of specific verbal gerunds, finally, are analyzed as being indefinite, cf. example (53):

- (53) I hate being called by my nickname. [“I hate *whenever* I am called by my nickname”] (Declerck 1991: 509, cited in Heyvaert 2008: 70)

In this particular reading, the specific verbal gerund is analyzed as “indefinite” because it refers to an arbitrary rather than individual instance of an event. These cases are argued to be comparable to uncount nouns, such as *milk* in *There's milk on the table*, rather than to proper names (Heyvaert 2008: 70).

Synchronic accounts thus tend to emphasize the similarities between verbal gerunds and ordinary nominals, applying not only the traditional referential categories of “specific” and “generic” reference to them, but also associating specific verbal gerunds with the typically nominal concept of (in)definiteness. This approach is problematized in diachronic accounts of referentiality, however (De Smet 2008; Fonteyn 2016; Fonteyn and Heyvaert 2018), which extend the referential analysis to *nominal* gerunds. The latter reveal that both gerund types differ quite fundamentally on a number of levels. The category of nominal gerunds, for instance, initially comprised two basic subtypes, viz. bare and definite nominal gerunds, as illustrated in (54)–(55). Over time, however, the number of bare nominal gerunds drastically diminished, with the nominal gerund specializing in uses that are associated with the functional import of the definite article, establishing “uniquely identifiable” referents which do not necessarily depend on their immediate context for identification (De Smet 2007: 103, De Smet 2008). At the same time, a paradigmatic expansion of formal markers of determination takes place, as we

increasingly find instances of nominal gerunds combining with an indefinite article, as in (56) (Fonteyn and Maekelberghe 2018; see Chapter 6).

- (54) A report in Middle East International of April 3 claimed that Palestinian casualties at demonstrations were declining, while *shooting of targeted activists, often by Israeli undercover units*, was increasing. (BNC)
- (55) The Argentine news agency Telam on Sept. 28 reported *the signing of a nuclear energy co-operation programme between Argentina and France* "with exclusively peaceful and not military terms". (BNC)
- (56) The touch may be a pat on the back, *a touching of the arm*, or an arm around a shoulder. (COCA)

While nominal gerunds have thus increasingly come to exploit all the options available within the nominal system of determination, with a focus on definite determination, verbal gerunds have moved away from nominal means of reference (Fonteyn 2016; Fonteyn and Heyvaert 2018). Even though diachronic studies acknowledge that some instances of verbal gerunds still closely resemble ordinary uncount noun phrases (e.g. verbal gerunds functioning like generic abstract nouns [Fonteyn and Heyvaert 2018], as in [57], for instance), other instances no longer fit the nominal paradigm. Most attention has in this context been devoted to verbal gerunds which establish specific reference by means of a control relationship with a matrix clause participant, as in (58):

- (57) *Flying in open spaces* is ideal, but among buildings can be horrific. (BNC)
- (58) Plumton is now owner of it, a man of fair land: and lately augmented by *wedding the daughter and heir generale of the Babthorpes*. (1535–43, PPCEME, cited in De Smet 2008: 72)

Despite its lack of definiteness markers, the verbal gerund *wedding the daughter* (. . .) is capable of establishing reference to a specific and retrievable entity. According to De Smet (2008: 72), instances like these are seemingly similar to definite nominal gerunds, except that the "identification of their referent typically depends on a control relationship" (in this case the subject of the sentence, "Plumton"), rather than through the use of the definite article. Fonteyn and Heyvaert (2018) remark that these types of verbal gerunds form a complication for the nominal system of referentiality, as "they seem capable of singling out a specific event without employing any nominal grounding mechanism that

marks the event as retrievable”. It is therefore claimed that these verbal gerunds “can no longer be fitted into the nominal classification of reference types” (Fonteyn 2016: 126).

The link between specificity and (in)definiteness is thus not as straightforward as synchronic studies seem to suggest. As pointed out in diachronic studies, verbal gerunds appear to have another formal means of expressing specificity, one that relies on more “clausal” mechanisms of control rather than nominal means of determination. At the same time, the functional profile of controlled verbal gerunds like the one in (58) is still placed on the same level as that of specific definite nominal gerunds, both being analyzed as identifying a single, specific event. Much remains to be said, then, about the exact nature of the differences between the referential strategies employed by nominal vs. verbal gerunds. In what follows, I will argue that, if we are to differentiate between the various referential strategies adopted in nominal and verbal gerunds, we first need to make a clear distinction between the concepts of specificity and definiteness. I will show that specificity does not necessarily involve (in)definiteness, but that both features can function independently. More specifically, I will suggest that specificity needs to be defined in terms of *referential anchorage* (cf. von Heusinger 2002) and distinguished from *identification* in order to avoid confusion with the notion of definiteness. While both categories are applicable and closely intertwined within the nominal paradigm, verbal gerunds often only allow for a description in terms of specificity or referential anchorage. Secondly, it will be argued that a third layer needs to be added to the referential model, viz. one that is concerned with *mental spaces* (Fauconnier 1985). Unlike what is often claimed for ordinary NPs (Langacker 1987a, 2009; Fauconnier 1985), specific entities referred to by deverbal nominalizations such as gerunds do not necessarily conceptualize “actual” entities in the spatiotemporal “actual space”. Teasing apart specificity and actuality, I will argue, will allow us to discern more subtle differences in the referential profiles of nominal and verbal gerunds. The details of this multilayered model of referentiality are laid out in the following section.

## 4.3 A multilayered account of reference

### 4.3.1 Definiteness

The literature on definiteness has brought forward a variety of labels that aim to capture the function of the definite article. Most of these labels describe the “referential functioning” of the definite article (Epstein 2001: 333–334; Lyons 1999: 253),

zooming in on the article's ability to mark a discourse referent as familiar (Christophersen 1939; Hawkins 1978; Heim 1982), (uniquely) identifiable (Du Bois 1980; Declerck 1991: 321; Langacker 1991: 98), retrievable (De Smet 2007: 80) or a combination thereof (Lyons 1999: 274–278).

While these labels account for the functioning of the definite article with a majority of prototypical nouns, one might question whether they are also applicable to gerunds. As noted by Lyons (1999: 253), “[i]dentifiability is particularly attractive for referential uses, especially where the referent is a physical entity locatable in a physical context”. This is corroborated in De Smet (2007: 81), who points out that “nominal gerunds (. . .), though clearly nouns, are by no means prototypical nouns referring to “manipulable entities” (Hopper and Thompson 1984: 738) and less straightforwardly manifest the typically nominal functions of introducing and deploying participants in discourse”. Still, he argues, “definiteness is also relevant – if less evidently so – to non-typical nouns that do not refer to manipulable entities” (De Smet 2007: 109).<sup>11</sup> In line with De Smet's claim, I will show in Section 4.4.2 that the definite article indeed contributes to the meaning of nominal gerunds, and as such constitutes an integral part of their referential profile.

More pertinent, however, is the relation between verbal gerunds and definiteness. In particular, it is unclear whether definiteness as a semantic-pragmatic notion is at all applicable to verbal gerunds, which have no formal means of expressing definiteness. Still, subject-controlled specific verbal gerunds as in example (58) have been considered functionally comparable to definite nominal gerunds, which would suggest that the notion of definiteness is also found with verbal gerunds. In Section 4.4.2, however, I will show that the semantic-pragmatic

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<sup>11</sup> The referential non-prototypicality of gerunds can be explained in terms of Lyons' (1977: 443–445) distinction between first-, second- and third-order entities, whereby prototypical manipulable entities represent first-order entities, i.e. physical objects which can be located in physical space. Gerunds, on the other hand, typically belong to the class of second-order entities, which comprises “events, processes, states-of-affairs etc. which are located in time and which, in English, are said to occur or take place, rather than to exist” (Lyons 1977: 443), as in example (a), or they are classified as third-order entities when they express a proposition rather than a state-of-affairs, as in (b) (see, amongst others, Lees 1960; Vendler 1968; Langacker 1991; Dik and Hengeveld 1991; Mackenzie 1996; Mackenzie 2004; Cristofaro 2003; Dixon 2006; Boye 2012; also see Chapter 7).

- (a) When Rosa had completed her gentle grooming, they resumed their circling of the square, hand in hand. (BNC) [second-order entity: “they resumed *the activity of* circling the square”]
- (b) Was there anything wrong with her representing a client before a state agency? (COCA) [third-order entity: “was there anything wrong with *the fact that* she represented a client (. . .)?”]

import of the definite article accounts for a number of uses with nominal gerunds that are not found with verbal gerunds. As such, it is argued that verbal gerunds do not have a functional equivalent of definite nominal gerunds, and that the notion of definiteness represents a layer in the referential model that is, in most cases, only applicable to nominal gerunds.

A final issue that needs to be addressed is the semantic-pragmatic blurring between definiteness and specificity. In line with the “referential” labels put forward by the literature on definiteness, specific reference has often been described in terms of identifiability and/or familiarity. More specifically, specificity is defined as involving reference to a particular entity that is familiar to the speaker, but not the hearer, whereas a non-specific referent is said to establish reference to an arbitrary, unidentifiable instance of a class (Lyons 1999: 165; Quirk et al. 1985: 272–272). Correspondingly, definite NPs are typically considered to be inherently specific, while (non-)specificity is more often understood as a semantic property of indefinite NPs, such as (59a) and (59b) (Quirk et al. 1985: 265–273; Lyons 1977; Thrane 1980; Langacker 1991: 103; Johanson 2006: 230), even though we do find instances of non-specific definite NPs (e.g. *I want to catch the murderer, whoever he is*; also see Donnellan 1966).

- (59) a. Yesterday, I saw *a wombat* in the zoo.  
 b. When you go to the zoo, you might spot *a wombat*. (‘any wombat’)

In these traditional approaches, specificity and definiteness are both defined in terms of identification and can, therefore, be placed on a single scale, as illustrated in Table 3 (von Heusinger 2002: 249). Based on this identifiability scale, definite NPs represent fully identifiable instances, followed by specific indefinite NPs, which are only identifiable to the speaker, and non-specific indefinite NPs, which are identifiable to neither hearer nor speaker.

**Table 3:** (non-)specificity and (in)definiteness on an identifiability scale (taken from von Heusinger 2002: 249).

Identified by	Definite (+ specific)	Indefinite specific	Indefinite non-specific
Speaker	+	+	–
Hearer	+	–	–

I argue, however, that – especially in the context of gerunds – definiteness and specificity should be considered two separate phenomena. In order to distinguish

between both concepts, then, it is important to arrive at a definition of specificity that more clearly sets it apart from definiteness. The following section will therefore propose an alternative definition of specificity, which focuses on the notion of “referential anchorage” (von Heusinger 2002, 2003; Enç 1991).

### 4.3.2 Specificity as referential anchorage

Building on work by von Heusinger (2002, 2003) and Enç (1991), it is argued here that the traditional definition of (non-)specificity in terms of (un)identifiability is problematic. The identifiability scale does not do justice to the inherently different discourse functions of definiteness and specificity: while definiteness is a discourse-pragmatic property that “expresses familiarity in discourse structure” (von Heusinger and Kaiser 2003: 43–44), specificity is concerned with the referential structure of discourse (von Heusinger 2002: 248). Even though specificity and definiteness are “clearly related phenomena” (Enç 1991:9), they differ in the types of links they form with previously established discourse referents:

Both definites and specifics require that their discourse referents be linked to previously established discourse referents, and both indefinites and nonspecifics require that their discourse referents not be linked to previously established discourse referents. What distinguishes these notions is the *nature of linking*. The linking relevant for definite NPs is the *identity* relation. ( . . . ) For ( . . . ) specificity ( . . . ), the relevant linking is the *inclusion* relation. Thus, specificity involves a weaker, looser relation to already established referents than definiteness.<sup>12</sup> (Enç 1991: 9, emphasis mine)

Von Heusinger (2002: 253) further explains the inclusion link that is established by specific referents and defines it in terms of being “referentially anchored to another discourse item”, meaning that “the interpretation [of the specific NP, CM] depends on the interpretation of the anchor expression” (von Heusinger 2003: 48). This anchor expression is typically the speaker or the subject of the sentence in which the specific referent is embedded (von Heusinger 2002: 268). To account for this definition of specificity, von Heusinger formulates a “Specificity Condition”, which stipulates that “an NP is specific if its index (or filename) can be linked to an already established index” (von Heusinger 2002: 268). This formal-semantic approach to referential anchorage remains quite abstract, however, and does not appear to be objectively verifiable. There is no real evidence, for instance, that in an ambiguous

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<sup>12</sup> It should be added, however, that even though the definite article is analyzed as a discourse-pragmatic marker which does not necessarily mark its referent as specific, it does in many cases at least *imply* the existence of an inclusion link, therefore increasing the likelihood of the referent having specific reference.



example like (60), the referent of “a merchant banker” would be anchored to the subject of the sentence in (60a), while it would lack such anchorage in the non-specific reading in (60b):

- (60) a. Peter intends to marry a merchant banker – even though he doesn’t get on at all with her.  
 b. Peter intends to marry a merchant banker – though he hasn’t met one yet. (Lyons 1999: 167)

In a follow-up article, von Heusinger (2003) devotes more attention to the contextual features that play a role in the marking of specificity. An indefinite NP, for instance, is more likely to receive specific reference if “more descriptive material is inserted into it” (2003: 6), as in example (61):

- (61) Everything turns on the theft and possession of *a book*, which was concealed in the *Finis Africae*, and which is now there again thanks to Malachi’s intervention (. . .). (von Heusinger 2003: 6)

Modality, he argues, can be an indicator of (non-)specificity as well. The subjunctive mood in (62), for instance, “strongly suggests that [the] indefinite is to be understood as non-specific”, while a past context would more likely contain specific instances (cf. example [59a]):

- (62) For that matter, he spoke always of things so good and wise that it was as if *a monk* were reading to us the lives of the saints. (von Heusinger 2003: 7)

Even though I concur with von Heusinger’s claim that specificity as a referential property of NPs largely relies on contextual input and, more specifically, referential anchorage, his claims are difficult to verify. Not only does the notion of referential anchorage remain abstract, it is also difficult to assess how much descriptive material an NP would need in order to receive specific reference. As for modality, the next section shows that there is no one-to-one relation between (ir)realis spaces on the one hand, and (non-)specificity on the other.

Instead, I propose that, in the case of gerunds, it is especially relations of control that constitute the prime example of referential anchorage, since they explicitly link a newly established discourse referent to an existing one. Importantly, subject-controlled verbal gerunds as in (63) illustrate that specificity can be achieved without the presence of determination. As such, control as a means of referential anchorage provides us with an ascertainable way of teasing apart definiteness and specificity.

- (63) “My reason for *pursuing the Acura dealership in Florida*,” Baranco explains, “was to help establish myself with Honda America.” (COCA)

While the specificity encoded by subject-controlled verbal gerunds has been described in terms of definiteness (Heyvaert 2008) and identification (De Smet 2008), I argue that they merely represent events that are referentially anchored to a specific entity in the matrix clause (i.e. the subject) and do not necessarily involve identifiable situations. I will come back to this issue in the discussion of the results in Section 4.4.

### 4.3.3 Mental spaces

A final refinement to the definition of specificity concerns the context or “space” (Fauconnier 1985) it tends to be invoked in. Just like specificity has tended to be associated with definiteness, it has been argued that specific expressions typically refer to *actual* entities, while non-specificity involves reference to *virtual* entities (see Langacker 1987a: 104–105, Langacker 2009: 176–179). Consider, for instance, examples (64a–c):

- (64) a. I’m saving to buy a car. It will be on sale in a few months.  
       b. I’m saving to buy a car. I’m still researching different models.  
       c. I’m saving to buy the car I talked to you about.

In all three cases, we know that the speaker wants to buy a certain object, but only in (64a) and (64c), the referent of *a/the car* receives specific reference. What the specific referents in (64a) and (64c) have in common, according to Langacker, is that they both involve *actual* referents (Langacker 2009: 94). The non-specific nominal in (64b), on the other hand, is said to have a *virtual* status (Langacker 2009: 94). As argued in Section 4.1.2, however, the concepts of actual and virtual in the nominal realm do not pertain to the actual *existence* of the referent: “to accept an object as real is not to accept it exists – that is taken for granted” (Langacker 2009: 172). Rather, an object is considered “real” in a speaker’s conception of reality when it is *identifiable*.<sup>13</sup> As such, examples (64a) and (64c) are said to represent actual entities, while (64b) is considered to be virtual.

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<sup>13</sup> Note that in Langacker’s terminology, specificity more or less equates with identifiability. Consequently, Langacker does not claim that all actual objects should be definite, but rather that all actual objects have specific reference.

The analysis of less prototypical nouns such as gerunds, however, shows that specificity cannot be equated with actuality and that, as was also argued for (in)definiteness, the notions of actuality and virtuality constitute yet another layer of the referential framework, related to but distinguished from the layers of definiteness and specificity. Indeed, gerunds do not only allow for an analysis in terms of the nominal properties of identification and spatial location, but also share some of the epistemic concerns of verbs and processes, viz. existence and temporal location. In this verbal domain, the actual/virtual distinction is defined in terms of existential parameters. An event is real when it has *occurred*, and virtual when it has not occurred yet or will never occur. The interpretation of actuality and virtuality is therefore also different when applied to deverbal nominalizations, which combine their nominal status with an event-like semantics. *The birth* in example (65a), for instance, has not taken place yet and, therefore, has a virtual existential status. Yet, in this case, the status of virtuality does not map onto notions of non-identifiability or non-specificity. In all three contexts provided in example (65), we find elements that serve to referentially anchor the referent of the deverbal nominal to the discourse context. A first indicator is the presence of the definite article, which, as a marker of identifiability, enhances the likelihood of the referent receiving a specific interpretation. Moreover, the specific status of the participants (or the descriptive material it contains, as in [65c]) provides additional reference points for the nominalization as a whole (*his son*, *the 28-year-old state of emergency*, *230 yards of [. . .]*). In other words, the referential anchorage provided by the context facilitates a specific interpretation, regardless of the gerund's actualization in the discourse world. Importantly, this shows that there is no relation of entailment between specificity and the space the entity is located in, and that they should therefore be considered as two distinct referential features.

- (65) a. He was devoted to his little girl and looking forward to *the birth of his son*. (BNC)
- b. Reacting to calls for *the lifting of the 28-year-old state of emergency*, a government spokesman confirmed that it would not be lifted before the elections. (BNC)
- c. In 1896, the minutes state that seven owners of property have applied for a supply of water from the Railway Company, which will necessitate *the laying of 230 yards of 3' cast iron main at an estimated cost of 55 (. . .)*. (BNC)

For the referential analysis in Section 4.4, the notion of mental spaces will be explicitly linked to the gerund's existential features, rather than to its status as

a specific or non-specific entity. More specifically, *actual* entities will be redefined as those entities that are accessed in either base space or in mental spaces set up by space-builders referring to past or present situations, as in (66a) and (66b). The mental spaces in (66a) and (66b) will be subsumed under the general denominator of actual space. Being accessed in actual space then lends the entity the existential status of being “actualized” in the discourse world. Virtual entities, on the other hand, are accessed in virtual space, which consists of hypothetical, future or counterfactual mental spaces, as in (66c–e), thus referring to events that have not actualized yet.

- (66) a. Let us start by *looking at the role of beliefs in the creation and possible alleviation of our problems*. (COCA)  
 b. It was the biggest demonstration since *the lifting of martial law in 1988*. (BNC)  
 c. Special Prosecutor Robert Fiske wants to know whether they tried to engineer *a firing of Attorney Jay Stephens*, a former Republican prosecutor who has been hired by the Resolution Trust Corporation to investigate Whitewater-related matters. (COCA)  
 d. *The cutting of the specimen* will be witnessed, and then they can take the samples to CellMark. (COCA)  
 e. He answers without *looking at her*, his eyes focused on space, on the moonlight. (BNC)

Note again that this is a relevant distinction for gerunds, since they can refer to specific, particular events even though they are not part of the actual reality (yet). By establishing links of referential anchorage, the gerund can facilitate or even enforce a specific interpretation, but this referential anchoring does not affect its existential status, i.e., it does not change the type of space it is accessed in.

Summing up, the referential model needed for the description of the English gerund is now in place. It refines the referential model that is usually applied to prototypical noun phrases in a number of ways:

- (i) it defines specificity in terms of referential anchorage rather than identification, in order to avoid confusion with the discourse-pragmatic notion of definiteness.
- (ii) it adds the notion of mental spaces as an additional analytical layer to the referential model, with mental space to be interpreted as the *existential* layer of their referential profile: actual entities are typically accessed in base space or past spaces, while virtual (non-actualized) entities are accessed in virtual spaces. Elements of referential anchorage can then

facilitate a specific interpretation for virtual entities, but they cannot turn them into actual entities in terms of their existential status.

In what follows, I will apply this multilayered referential model to the dataset of Present-day English nominal and verbal gerunds. It will be shown that, by exploring how they behave with respect to definiteness and identification, referential anchorage and specificity, as well as with regard to the mental spaces in which they are located, we can ultimately arrive at a more fine-grained referential profile of both gerund types.

## 4.4 A referential analysis of nominal and verbal gerunds

### 4.4.1 Methodology

The analyses carried out in this chapter are based on the sets of 800 nominal and 800 verbal gerunds from BNC and COCA, as described in Chapter 3. In line with the multilayered model of referentiality introduced in Section 4.3, the gerunds were coded for (i) definiteness marking (e.g. articles, demonstratives, possessives or oblique subjects), (ii) the referential subcategories of specific, non-specific and generic reference, and (iii) their existential status, being either actual or virtual.

As for the notion of referential anchorage, various types of control relations were coded. As mentioned above, I will consider control as a type of referential anchorage that is particularly relevant in the description of (verbal) gerunds. Lyngfelt (2009) presents an overview of different types of control phenomena, which he defines as “a coreference relation between the understood subject of a non-finite clause and some other element that provides its interpretation” (2009: 33). The notion of control is typically discussed in the context of object complementation, where the understood subject of the non-finite clause can be controlled by the matrix subject, as in (67a) or matrix object, as in (67b). Gerunds occupying other clausal slots can receive control as well, however. Adverbial adjuncts, for instance, typically receive subject control, as in (67c). The controller can also be another matrix clause element, such as the possessor of a noun phrase in the case of adnominal non-finite clauses, as in (67d) (also see Lyngfelt 2009: 43), or an adjunct in the case of (67e).

We can also discern two types of non-prototypical control patterns. The first type comprises cases where the controller is not found in the immediate matrix clause, but rather in a coordinate clause, as in (67f), or a more superordinate one, as in (67g). In a number of cases, the understood subject of the gerund is coreferential with a noun phrase that is not an argument of the matrix

clause itself, but rather part of another noun phrase, as in (67h). A second type of non-prototypical control involves cases where there is not a complete match between the understood subject of the gerund and the matrix clause controller (also see Lyngfelt 2009: 47). In example (67i), for instance, there is no one-to-one relation between the subject of the matrix clause and the understood subject of the gerund.

Finally, there are those instances which are not controlled by a matrix clause element. In the context of non-finite clauses, one type of non-control is so-called “arbitrary” control, i.e. “cases where there is no controller and PRO instead receives a generic or arbitrary interpretation” (Lyngfelt 2009: 34). Typical instances of arbitrary control are non-finite subject clauses, as in example (67j). Gerunds without a controller do not necessarily receive a generic interpretation, however. In some cases, the controller can be retrieved from the broader context, or it is represented by the speaker or writer and is hence not explicitly encoded, as in (67k). With a majority of non-controlled gerunds, and especially nominal gerunds (cf. *supra*), the understood subject remains implicit (67l).

- (67) a. He ran all the way home, keeping well off the road in case Nails came in the car and insisted on *giving him another lift*. (BNC)  
 b. I’m sorry that I accused you of *taking them*. (BNC)  
 c. In *presenting the programme to the Assembly*, Meksi said that it was hoped that the freeing of food prices would ease scarcities. (BNC)  
 d. It casts more doubt on Wallace’s conviction in 1981 of *the killing of his friend, antique dealer Jonathan Lewis*. (BNC)  
 e. (. . .) *the writing of reports* was in most cases undertaken solely by the head of department. (BNC)  
 f. It was an arduous process, *the writing of that story*, but Luke took great pride in. (COCA)  
 g. He aims to please even if it means *putting his principles in cold storage and his policies in the mixer*. (BNC)  
 h. Satisfaction for elderly people comes from *being part of a cohesive group who know the rules, the politics and the history*. (BNC)  
 i. Such concessions were usually granted only to those Cherokees who advocated *the signing of a treaty to remove*. (COCA)  
 j. *Helping others succeed* leads to more success and recognition for everyone. (COCA)  
 k. Of course, *having a sixteen-year-old daughter who practically swooned at the sight of the man*, didn’t help matters. (COCA)

1. This, in turn, led to *the founding of antiquarian societies*, the invention of archaeology, and the arrival of the neo-classical movement in art and architecture all over Europe. (BNC)

For the present analyses, a distinction was made between cases of subject control (67a, 67c, 67i), object control (67b), “other” control (67d–h) and no control (67j–l). Finally, I also discerned a category of “internal” control in order to account for instances where the subject of the gerund is present in the gerund phrase:

- (68) a. The others are *the annual (and ever-popular) changing of leaf color* and the somewhat confusing period known as Indian summer. (COCA)
- b. Was there anything wrong with *her representing a client before a state agency*? (COCA)

#### 4.4.2 Results

Before we go into the various layers of the referential framework and how they are instantiated in nominal gerunds vs. verbal gerunds, let us briefly consider the various referential subtypes that are found among nominal and verbal gerunds. Examples are given in (69)–(73), their distribution over both gerund types is illustrated in Table 4.

**Table 4:** Referential subtypes with nominal (NG) and verbal gerunds (VG).

Reference type	Nominal gerund		Verbal gerund	
	n	%	n	%
Non-referential	27	3%	9	1%
Generic	138	17%	151	19%
Non-specific	160	20%	123	15%
Specific	394	50%	407	51%
Ambiguous	81	10%	110	14%
<b>Total</b>	<b>800</b>	<b>100%</b>	<b>800</b>	<b>100%</b>

Example (69) illustrates specific nominal and verbal gerunds, they constitute the largest group with both nominal and verbal gerunds. In example (69a), we might argue that the descriptive information in the *of*-phrase contributes to a

specific reading, while the specific status of the verbal gerund in (69b) is especially facilitated by the referential anchorage of the control relation.

- (69) a. The advent of satellite television and *the imminent breaking of what has been a BBC monopoly of cricket* offers opportunities of expanding TCCB income. (BNC)  
 b. From *reading this book* I was not convinced that Wentwood actually aspires to more than that. (BNC)

Generic gerunds are illustrated in (70). Carlson (2019: 232) defines genericity as “a phenomenon whereby generalizations are expressed by sentences that typically abstract over events, situations etc.”. A distinction is typically made between generic sentences on the one hand, which can be described as “propositions which (. . .) report a regularity which summarizes groups of particular episodes or facts” (Krifka et al. 1995: 2), and generic noun phrases on the other, which refer to kinds or classes of individuals rather than to “particular individuals of the sort” (Carlson 2019: 248). While generic noun phrases are often embedded in generic sentences, they can also occur as kind-referring nouns in non-generic sentences (e.g. *He wrote a paper on [sharks]*). Behrens (2005) discerns a third level of genericity, viz. text-level genericity. A generic text presents “generalized knowledge about a particular kind or a particular stereotype situation” (Behrens 2005: 289). Just like generic noun phrases are typically part of generic sentences, generic sentences are often embedded in generic texts.

In this study, gerunds were labelled as generic if they referred to types of activities of events, regardless of the type of sentence or text they occur in. Similar to regular English noun phrases, genericity can be expressed by definite gerunds (70a), bare gerunds (70b) or gerunds with indefinite article (70c). In (70a) and (70c), the generic gerund is embedded in a generic sentence. The broader context furthermore shows that the generic sentence in (70c) is also embedded in a generic text. Sentence (70b), on the other hand, is not generic, as it describes a specific situation (someone explaining something), but it does contain a generic gerund, as *investing in a pension scheme* refers to a type of activity one can carry out, rather than a specific activity that has taken place.

- (70) a. *The recycling of polystyrene*, for instance, requires temperatures above 200C (. . .). (BNC)  
 b. Steve Wellard, a Royal Scottish Consultant, explained the benefits of *investing in a pension scheme*. (BNC)



- c. It is *an obtaining of services* where the other is induced to confer a benefit by doing some act, or causing or permitting some act to be done, on the understanding that the benefit has been or will be paid for. (BNC)

The third-largest group is that of non-specific instances. Typically, non-specificity involves reference to an arbitrary instance which is not referentially anchored to other discourse participants, as in (71a–b). In some cases, however, non-specificity can also arise in so-called distributional contexts, as in (71c) and (71d). In these cases, a generalization is made over actual occurrences of an event (Willemse 2005: 189–190), resulting in a “multiple-situation-bound interpretation” (Huddleston and Pullum 2002: 406). Notice that non-specificity is established here despite the presence of a definite article (71c) and a control relation (71d).

- (71) a. Moreover, the dismissal of a respected and tenured researcher could only be justified upon *a showing of failure of competence in many lines of his work*. (COCA)
- b. We can’t afford to make mistakes in the draft, and the chance of *making an error* is greater if you draft for need or by position instead of taking the best player. (COCA)
- c. The girl had chosen to take her seat in the one spot from which *the opening of the inner door* would afford her brief glimpses into the prince’s audience-chamber. (BNC).
- d. And with Christmas coming, they’re asking anyone who’s thinking of *giving a bike for a present*, to think of giving the right clothing as well. (BNC)

The smallest group consists of non-referential instances. They are represented by attributive gerundive constructions that occur in the predicative complement slot of copular clauses, as in (72). Unlike prototypical referring expressions, non-referential instances have a descriptive function (Quirk et al. 1985: 273) and are typically “discursively inert” (Komen et al. 2014), which makes them less susceptible to anaphoric tracking (Fonteyn, Heyvaert and Maekelbergh 2015).

- (72) a. (. . .) he viewed the restrictions as *a taking of private property*. (COCA)
- b. In this chapter I discuss what we need to know before we start on our travels, which I call *examining the context of the curriculum* (. . .). (BNC)

Examples (73a) and (73b), finally, illustrate gerunds that are ambiguous between a generic and a non-specific reading. More specifically, these gerunds can be interpreted as referring to a type of activity, in which case they receive generic reference,

or they can refer to any instance of “burning Anabaptists” or “closing churches”, thus establishing non-specific reference. Example (73c), on the other hand, contains a gerund that is ambiguous between a generic and a specific reading: someone can be charged with a type of demeanor (“death by reckless driving”), but the context may at the same time imply that this specific event has actually taken place (i.e. the man has actually caused a death by driving recklessly).

- (73) a. He approved of *the burning of Anabaptists*. (BNC)  
 b. The procedures for *closing and disposing of redundant Anglican churches* are long and cumbersome. (BNC)  
 c. A man has been charged with *causing death by reckless driving*. (BNC)

As is shown in Table 4, the distribution of referential subtypes over nominal and verbal gerunds is relatively comparable. The majority of nominal and verbal gerunds establish specific reference, followed by a smaller proportion of generic and non-specific instances. Ambiguous instances represent the fourth largest category,<sup>14</sup> while only a small minority of nominal and verbal gerunds are non-referential. In view of the fact that nominal and verbal gerunds differ substantially in terms of their formal features, it will be interesting to consider more closely the mechanisms through which they establish reference. In the next sections, I will focus on the three layers of the referential framework, and explore how they are represented with nominal and verbal gerunds.

#### 4.4.2.1 Definiteness

Section 4.3 raised two questions with regard to the notion of definiteness in the context of gerunds, viz. whether the definite article retains its basic semantic value when it combines with nominal gerunds and whether definiteness as a semantic-pragmatic concept is applicable to verbal gerunds. In order to answer the first question, we first need to know how we can determine the semantic contribution of the definite article to nominal gerund constructions. In his diachronic study of bare and definite nominal gerunds, De Smet (2007: 81) notes that is “difficult to get a firm grip on the function of the definite article in nominal gerunds”. At the same time, he zooms in on two tendencies which, according to him, indicate that the definite article retains its function as a “marker of

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<sup>14</sup> Of the 81 ambiguous nominal gerunds, 68 are ambiguous between non-specific and generic reference, while 13 are ambiguous between specific and generic reference. With verbal gerunds, 46 instances are ambiguous between non-specific and generic reference, while 64 were considered ambiguous between specific and generic reference.

retrievability” when it is used with nominal gerunds (De Smet 2007: 82). A first tendency involves the role of the *of*-phrase, which, when it contains the notional subject of the gerund construction, as in example (74), is argued to serve as a reference point for the referent of the gerund and, as such, triggers the occurrence of a definite article (cf. Willemse 2005; Langacker 2001). Similar to a construction like *the lights of a car*, where the indefinite NP *a car* “facilitates mental contact with the entity denoted by the first component NP [*the lights*, CM] to such an extent that it becomes sufficiently ‘identifiable’” (Willemse 2005: 284), the presence of the definite article in examples (74a) and (74b) is sanctioned by the conceptual link provided by the notional subjects *a new moon* and *a stone*.

- (74) a. Some believe that new plants flourish if their early growth coincides with *the growing of a new moon*. (BNC)  
 b. Unlike *the falling of a stone*, the fall of the soul is unnatural, but a proper discipline will help reverse this motion. (COCA)

A second tendency has already been introduced in this chapter, viz. the notion of control. According to De Smet, nominal gerunds typically lack control relations because the definite article already marks the event referred to by the gerund as accessible, thus reducing the need for syntactic links to the immediate linguistic environment (De Smet 2007: 109). He concludes, then, that the definite article, as it is used with Early Modern nominal gerunds, is not a functionally empty element, but rather played an important role in the diachronic development of the nominal gerund construction.

Let us now consider these two tendencies in the light of Present-day English data. Of the 800 nominal gerunds in my dataset, 586 instances combine with a definite article. Almost 24% of these definite nominal gerunds have a notional subject in their *of*-phrase which can serve as a reference point (compared to 14% with bare nominal gerunds).<sup>15</sup> Secondly, only 11% of definite nominal gerunds receive subject control, which confirms that the definite article, as a marker of (low) accessibility (cf. Epstein 2001), indicates that the interpretation of the gerund does not need to be linked to the immediate context. We also find a number of uses of the definite article that are comparable to its function with prototypical nouns. In example (75a), for instance, the definite article indicates that the event referred to

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<sup>15</sup> De Smet considers notional subjects to be more salient reference points than notional objects, because they represent the more prominent clausal participant (cf. Langacker 2001). An alternative proposal is made by Nichols (1988: 404), who argues that in English, “definiteness is favored when the nominalization has a subject or object phrase with *of*”, which, according to her, leaves the speaker with “little freedom to choose between definiteness and indefiniteness”.

should be familiar to the hearer. In (75b), furthermore, the definite article can be argued to contribute to a shift in point of view (Epstein 2001: 363), whereby the hearer is prompted to shift his perspective to that of the character Erica.

- (75) a. Pro-Iraqi feeling in Algeria prompted the massive Feb. 1 demonstration, and further large demonstrations in Algiers and other towns on Feb. 15 in protest *at the bombing of the Baghdad shelter*. (BNC)
- b. They had agreed that each of them should have carte blanche, no questions asked nor opinions given, unsolicited. But Edward had lost interest in easy conquests for the present, and Erica hinted at *the ending of an affair* when she had left the States. (BNC)

Overall, we can thus argue that the definite article with nominal gerunds largely retains its function as marker of accessibility/retrievability/identifiability, despite the nominal gerund's non-prototypical nominal profile.

The second question pertained to the interpretation of definiteness with verbal gerunds. When we consider Table 5, which provides an overview of the types of explicit markers found in the initial determiner-slot of nominal and verbal gerunds, it becomes immediately clear that nominal and verbal gerunds differ fundamentally in terms of the types of marking they occur with. While nominal gerunds overwhelmingly occur with definite determination, verbal gerunds almost exclusively prefer a bare form. One might question, then, whether the referential layer of definiteness is applicable to verbal gerunds. As already mentioned before, subject-controlled verbal gerunds as in example (76) have been considered, to a certain extent, functional equivalents of definite nominal gerunds (De Smet 2008; Heyvaert 2008; Fonteyn and Heyvaert 2018).

**Table 5:** Internal grounding elements with NGs and VGs.

Grounding element	Nominal gerund		Verbal gerund	
	n	%	n	%
Bare	73	9%	766	96%
Indefinite article	68	9%	na	na
Indefinite quantifier	21	3%	na	na
Demonstrative	9	1%	na	na
Possessive/genitive	42	5%	10	1%
Definite article	586	73%	na	na
Subjectoid	na	na	24	3%
<b>Total</b>	800	100%	800	100%

- (76) Despite *being part of a happy close-knit Jewish family*, Alison couldn't wait to go out in the world to do her own thing. (BNC)

I argue, however, that verbal gerunds as in (76) do not have the same functional properties as definite nominal gerunds. More specifically, while subject control as a mechanism of referential anchorage may be responsible for the establishing of specific reference, it does not mark the verbal gerund as an identifiable or accessible referent, as opposed to the definite article with nominal gerunds. In example (77), for instance, both situations described by the verbal gerund refer to specific events that the participant wishes to undertake, but the speaker does not intend to represent these events to the hearer as identifiable or accessible.

- (77) a. He'd told us earlier that he was planning on *taking a woman to Tramp that night*. (BNC)  
 b. He ran all the way home, keeping well off the road in case Nails came in the car and insisted on *giving him another lift*. (BNC)

Even though it could be argued that the situation described by the verbal gerund in example (77) appears to be accessible to the hearer, this accessibility is in fact only derived from the gerund's immediate linguistic context, i.e. the hearer depends on elements from the superordinate clause to construe a mental image of the situation. The definite article, in contrast, marks an NP as accessible in the broader discourse setting, "somewhere in the dynamic configuration of [mental] spaces" (Epstein 2001: 345). This particular function of the definite article also accounts for a number of uses of nominal gerunds that are found less often with verbal gerunds. Definite nominal gerunds, for instance, occur relatively easily as independent sentences, as in example (78), because, as opposed to (bare) verbal gerunds, they can rely on the definite article to mark the situation as accessible. Secondly, when a definite nominal gerund functions as subject of the sentence, it frequently establishes specific reference, as in example (79a). Verbal gerunds in subject position, on the other hand, display a significant association with generic reference ( $p < 0.0001$ ,  $\phi = 0.22$ ), as in (79b). Because they cannot rely on subject control as referential anchorage nor on any additional accessibility markers, these verbal gerunds fail to establish specific reference, and thus refer to generic types of events.

- (78) (. . .) it resulted in the forced removal of blacks from white areas. *The bulldozing of people from their homes*. The relegation of blacks to inferior education. (BNC)

- (79) a. *The careless handling of women's complaints* ended the Navy's support of Tailhook's annual convention – and cost Navy Secretary Lawrence Garrett III and other top dogs their jobs last September. (COCA)
- b. *Travelling in queues* reduces the drag of the water on any one individual, except for the leader. (BNC)

I have thus shown that, despite the nominal gerund's eventive, second-order semantics, the semantic-pragmatic import of the definite article in nominal gerund constructions is largely comparable to its functioning with prototypical nouns – i.e. the reified event is marked as retrievable, accessible or identifiable within the broader discourse setting – and that it makes an important functional contribution to the referential profile of nominal gerunds. Verbal gerunds, on the other hand, lack the functional dimension of accessibility and identifiability that is typically associated with definiteness (see, however, example [84] for an exception). As such, definiteness can be argued to constitute a layer in the referential model that almost exclusively pertains to nominal gerunds. Importantly, considering definiteness and specificity as two independent concepts also explains why verbal gerunds, despite lacking a formal or functional equivalent of definiteness, can still establish specific reference. In the next section, I will take a closer look at how specificity is represented with nominal and verbal gerunds, and how it relates to the layer of definiteness.

#### 4.4.2.2 Specificity

The previous section mainly emphasized the *differences* between definiteness and specificity. Yet, it should be noted that, especially with nominal gerunds, (in)definiteness and (non-)specificity sometimes overlap. Table 6 provides an overview of internal grounding elements (i.e. determiner(-like) elements) with nominal and verbal gerunds with specific vs. non-specific reference. With nominal gerunds, we find a significant increase of bare/zero and indefinite determination ( $p < 0.0001$ ,  $\phi = 0.18$ ) and a significant decrease of definite articles ( $p < 0.0001$ ,  $\phi = 0.18$ ) in instances with non-specific reference, as in examples (80a) and (80b).

- (80) a. In the absence of *widespread sampling of days* uncertainty will remain as to whether all of the potential sources of a particular clay have been located. (BNC)
- b. In one group a discussion on referral procedures may produce a *lessening of resentment amongst senior staff*. (BNC)

**Table 6:** Internal grounding elements with NGs and VGs: specific vs. non-specific.

Grounding element	Nominal gerund				Verbal gerund			
	specific		non-specific		specific		non-specific	
	n	%	n	%	n	%	n	%
Bare	14	4%	21	13%	383	94.1%	118	96%
Indefinite article	33	8%	18	11.5%	na	na	na	na
Indefinite quantifier	2	1%	18	11.5%	na	na	na	na
Demonstrative	7	2%	2	1%	na	na	na	na
Possessive/genitive	33	8%	6	4%	9	2.2%		0%
Definite article	304	77%	95	59%	na	na	na	na
Subjectoid	na	na	na	na	15	3.7%	5	4%
<b>Total</b>	<b>394</b>	<b>100%</b>	<b>160</b>	<b>100%</b>	<b>407</b>	<b>100%</b>	<b>123</b>	<b>100%</b>

Note, however, that there is no complete overlap, as we also find specific bare and indefinite nominal gerunds (81a) and (81b), as well as non-specific definite nominal gerunds (81c):

- (81) a. The occasion for dinner at Miss Alice Hooper's was *an unveiling of a painting purchased on her behalf*. (COCA)  
 b. They recalled that in 1958 Quakers had made an unsuccessful attempt to interrupt *atmospheric testing of H-bombs at Bikini atoll in the Pacific*. (BNC)  
 c. Some believe that new plants flourish if their early growth coincides with *the growing of a new moon*. (BNC)

A different picture arises when we look at verbal gerunds, which display no substantial formal differences between specific and non-specific reference. Generally, verbal gerunds can exhibit three types of referential marking: either they are bare, as in (82a), or they occur with an explicit subject, in the form of an oblique subject (or "subjectoid"), as in (82b), or a genitive subject, as in (82c).

- (82) a. Despite *being part of a happy close-knit Jewish family*, Alison couldn't wait to go out in the world to do her own thing. (BNC)  
 b. I was a boy then, but I remember *the old king using the Ruhk Staff*. (COCA)  
 c. What's the force of *your saying it was not an investigation, that it was just a review?* (COCA)

Interestingly, not all verbal gerunds with an explicit subject establish specific reference: as can be observed in Table 6, five instances with oblique subject realize non-specific reference. In these cases, the non-specific status of the subject coerces a non-specific reading, as illustrated in example (83).

(83) *A car hitting the side of the Land Rover* would probably crush the fuel tank and spill petrol, creating an explosion risk. (BNC)

Verbal gerunds with a genitive subject, on the other hand, do seem to be typically associated with specific reference, as they create the kind of definiteness that easily facilitates specificity, as in example (84). Tellingly, no verbal gerunds with genitive subject were found with non-specific reference in my dataset. One could argue, then, that instances like these most closely resemble more prototypically nominal instances, not only in form, but also in terms of their discourse-pragmatic and referential properties.

(84) In another letter home I made these nightly studies the reason for *my not looking for a wife*. (COCA)

A large majority of verbal gerunds, however, retain their bare form when establishing specific reference and as such form the exact opposite of the pattern that we find with nominal gerunds, where bare gerunds occur, but only marginally. This observation is in line with von Heusinger's interpretation of specificity as referential anchorage: specific noun phrases in that view do not necessarily involve the presence of (definite) determination. Table 7 maps out the various control relations found with specific verbal gerunds compared to nominal gerunds

**Table 7:** Control relations with specific NGs and VGs.

Control relation	Nominal gerund		Verbal gerund	
	n	%	n	%
Internal control	139	17%	24	3%
Other control	26	4%	23	3%
Object control	0	0%	45	5%
Subject control	53	7%	257	32%
No control	176	22%	58	7%
<b>Total</b>	800	100%	800	100%

**Note:** The 24 instances of verbal gerunds with internal control are those which combine with an oblique or genitive subject.



in more detail. As can be observed, the majority of verbal gerunds are controlled by the subject, object or another element from the matrix clause (see examples [85a–c]). Nominal gerunds, on the other hand, typically have no control relation with a matrix clause participant. This is not surprising, since, as noted already in Section 4.3.1, the presence of a definite article often blocks the necessity of a control relation (De Smet 2007: 82):

It appears that the presence of the definite article reduces the likelihood of a gerund construction receiving a controlled interpretation. The reason is that a piece of information, when marked as retrievable, typically does not require integration in the immediate context in order to be successfully interpreted, but is accessible to the hearer independently.

As pointed out in Section 4.2.2.1, though, a substantial number of nominal gerunds take a form of “internal referential anchorage” (labelled as “internal control” in Table 7), viz. they present the nominalized event as specific by linking it to the reference point in the *of*-phrase (Langacker 2001; Willemse 2005). Instead of the nominal gerund establishing a control relation with a matrix clause participant, it is the *of*-phrase which contains the agent of the process underlying the nominalization, as in example (85d).

- (85) a. *By writing for a national radio network*, I would enjoy the best of both worlds. (BNC)  
 b. I had accused him privately when he was last here of *lying about the Battle of Bunker Hill*. (COCA)  
 c. *Making this movie* was sort of an evolutionary process for you. (COCA)  
 d. Before *the coming of the railway* the works relied almost entirely upon barge transport for the supply of coke and river mud and for the transport of the finished products. (BNC)

Finally, it should be noted that subject-control does not necessarily enforce a specific reading. As was already noted in Heyvaert (2008), if the controller has generic reference, the verbal gerund is likely to receive generic reference itself, as in example (86). Secondly, the controller may denote multiple instantiators, in which case a distributive, non-specific reading is evoked, as in (87).

- (86) One microorganism, however, the protozoan *Lambornella clarki*, has evolved a most unusual and effective strategy for *coping with its potential mosquito predators*. (COCA)  
 (87) Moreover, the few bumped out of Harvard can always solace themselves by *taking their acceptance by Northwestern*. (COCA)

Still, generic verbal gerunds are significantly more often associated with non-controlled contexts ( $p < 0.001$ ,  $\phi = 0.32$ ), as in (88), suggesting that generic entities generally lack referential anchorage:

(88) *Flying in open spaces* is ideal, but among buildings can be horrific.

From this perspective, one could argue that generic verbal gerunds behave similarly to prototypical abstract nouns with zero determination which establish generic reference (cf. Heyvaert 2003, 2008; De Smet 2008; Fonteyn and Heyvaert 2018). As such, they seem to form the subtype of verbal gerunds that still fits the nominal referential paradigm best.

#### 4.4.2.3 Existential status and mental spaces

The results presented so far have focused on the first two layers of the referential framework, involving a description of the traditional referential subtypes and their relation to the mechanisms of referential anchorage and the discourse-pragmatic notion of (in)definiteness. This section deals with the third layer of referentiality: the – actual or virtual – *mental space* the referent is located in. While the notion of actualization is not immediately relevant to prototypical nouns, which are “existentially presupposed” (Langacker 1987a, 2002, 2009), it is worth investigating in the context of deverbal nominalizations such as gerunds. Concretely, in my corpus analysis, gerunds were coded as *actual* if they were accessed in the discourse base space or in spaces referring to past situations, as in (89a) and (89b), and as *virtual* if they were accessed in spaces which construed future, hypothetical or counterfactual situations, as in (89c) and (89d). Gerunds with generic reference occurring in clearly generic sentences were excluded from the actual-virtual dichotomy and were analyzed as being embedded in generic space. Non-referential instances, as well, were categorized as belonging to a non-referential space.

- (89) a. *The dumping of contaminants ‘in situ’ must be ended and the most sensitive areas of seabed must not be disturbed by exploration.* (BNC) [Base space, i.e. the space in which the discourse participants are located]  
 b. *Meanwhile Mr Lamont came under attack for spending the whole of August away from his desk.* (BNC) [Past space]  
 c. *In one group a discussion on referral procedures may produce a lessening of resentment amongst senior staff.* (BNC) [Hypothetical space]

- d. Georgiades had a man on that route, too, but there was only one of him and when he saw the man coming he did not risk *leaving his post to run* and tell them but watched the man until he was safely inside the shop. (BNC) [Counterfactual space]

It was argued before that, like the categories of definiteness and indefiniteness, the actual-virtual dichotomy does not directly map onto the specific vs. non-specific distinction. Specificity cannot, in other words, be reduced to actual space and actual entities may refer to non-specific situations, especially when a distributive reading is involved. Virtual entities, on the other hand, can establish reference to a specific situation, particularly when they are referentially anchored to the previous discourse context. In (89d), for instance, specific reference is facilitated through the control relation, even though the event referred to is not actualized yet.

As can be observed from Table 8, nominal gerunds more frequently conceptualize actual entities than verbal gerunds do ( $p < 0.001$ ,  $\phi = 0.08$ ). Moreover, while nominal gerunds display a preference for actual entities over virtual ones ( $p < 0.001$ ,  $\phi = 0.38$ ), verbal gerunds conceptualize actual and virtual entities almost equally frequently. It follows that nominal gerunds tend to refer to situations or events that have already taken place or are currently taking place, while verbal gerunds are more flexible with regard to the existential status of the situation they refer to. These existential differences may be linked to the preferred discourse-pragmatic and referential mechanisms of nominal and verbal gerunds. While definite determination could be argued to facilitate some existential presupposedness by marking a referent as identifiable, referential anchorage in the form of control relations is much looser, and therefore lends its referent more existential flexibility. Secondly, the results show that while specific nominal gerunds are

**Table 8:** Existential status of nominal and verbal gerunds: overall vs. specific reference.

Existential status	Nominal gerund				Verbal gerund			
	overall		specific		overall		specific	
	n	%	n	%	n	%	n	%
Actual	485	61%	310	79%	332	41.5%	211	52%
Virtual	187	23%	84	21%	332	41.5%	196	48%
Generic	101	13%	0	0%	127	16%	0	0%
Non-referential	27	3%	0	0%	9	1%	0	0%
<b>Total</b>	<b>800</b>	<b>100%</b>	<b>394</b>	<b>100%</b>	<b>800</b>	<b>100%</b>	<b>407</b>	<b>100%</b>

significantly associated with actual space ( $p < 0.0001$ ,  $\phi = 0.30$ ), no such association is found with verbal gerunds.

Summing up, applying the multilayered framework to the analysis of Present-day English gerunds has shed new light on their different referential functioning. While both gerund types display a distribution of traditional referential subtypes (specific, non-specific and generic reference) that is comparable, incorporating other parameters into the referential analysis allowed us to discern a number of interesting differences that had thus far gone unnoticed. First of all, even though specific referents are the largest group with both nominal and verbal gerunds, the way in which specific reference is established with both gerund types is very distinct. Nominal gerunds typically rely on definite determination as a facilitator of specific reference, while specificity with verbal gerunds is mainly a result of control relations. While nominal gerunds thus conform more to the nominal paradigm of referentiality, where (non-)specificity is often linked to effects of (in)definiteness, verbal gerunds clearly illustrate how specificity can manifest itself as an independent phenomenon which is achieved through mechanisms of referential anchorage. This also means that the type of specificity found with subject-controlled verbal gerunds does not need to be defined in terms of definiteness or identifiability, as it has been in earlier studies. At the same time, not all verbal gerunds have moved away from the nominal system of referentiality, as instances of generic verbal gerunds and verbal gerunds with a genitive subject still reflect the referential behavior of more prototypical nouns. Secondly, incorporating the notion of mental spaces into the referential model accommodated for the fact that gerunds, representing formally hybrid structures, can also be described in terms of their existential status. This revealed that nominal gerunds tend to conceptualize actual(ized) situations, whereas verbal gerunds do not show any preference for either actualized or virtual entities. Interestingly, it also shows that nominal gerunds display a closer association between the layers of specificity and actuality, while no such overlap is found with verbal gerunds.

## 4.5 Localizing satellites and complexity

So far, this chapter has focused on markers of determination, control relations and mental spaces as elements that need to be incorporated in a model of referentiality. Yet, noun phrases may also contain a number of lexical elements which contribute to the more general description of an entity. In Rijkhoff's (2002) work on the structure of noun phrases, such lexical expressions are labelled "satellites", which are to be distinguished from so-called "operators",

i.e. grammatical elements such as determiners, demonstratives and numerals. Rijkhoff distinguishes between *discourse-referential* operators and satellites, which say something about the status of the entity in the discourse world, and *descriptive* satellites and operators, which describe the entity itself. While I have thus far focused on the role of discourse-referential operators in establishing reference, and more specifically, on the role of determiners, this section wishes to zoom in on the role of lexical expressions or satellites, and how they may function differently with nominal and verbal gerunds. At the same time, I will present a more general overview of the internal complexity of Present-day English gerunds, evaluating some of the claims made by De Smet (2008: 90–95) on the syntactic flexibility and internal complexity of verbal gerunds during the Middle and Early Modern English period.

According to Rijkhoff, the lexical counterpart of discourse-functional operators such as determiners is formed by the class of “postdeterminers”, a group of elements which share characteristics with both determiners and adjectives and which typically occupy the secondary slot in the noun phrase, after markers of determination. These postdeterminers serve to locate the referent of the noun phrase in the physical or discourse context, thus facilitating its identification by the hearer (Breban 2010: 77). Since postdeterminers are a typically nominal feature, they can be found with nominal gerunds, as in examples (90a) and (90b), but not with verbal gerunds. In example (90a), the epistemic semantics of the postdeterminer *eventual* indicates that the event designated by the nominal gerund is a likely outcome. It thus emphasizes that the referent is specific and identifiable. The postdeterminer *certain* as in (90b), on the other hand, typically combines with indefinite noun phrases and contributes to the interpretation of the noun phrase as a specific entity, despite the presence of an indefinite article (also see von Heusinger 2002: 262).

- (90) a. And it is for that reason that the Waco incident will be manipulated by our government such as to bring about *the **eventual** disarming of every American*. (COCA)
- b. I watch films of the other older lifters, such as Alexyev, watching to see if I can pick up when and why they begin to lose it – *a **certain** dulling of their fury*, at first, in the snap and the rip of their initial jerks. (COCA)

In addition to postdeterminers, which help in the identification of a referent and are thus classified as discourse-referential satellites, noun phrases can contain a number of lexical expressions which serve to *describe* the referent. Rijkhoff (2002) distinguishes between localizing, quantifying and qualifying descriptive localizing satellites. Of particular interest here are localizing satellites, which,

according to Rijkhoff, have an identifying function in a more indirect way. More specifically, Rijkhoff identifies possessive pronouns and relative clauses as typical localizing satellites, because they link the referent of the noun phrase to other entities or “anchors” (e.g. the possessor or another noun phrase in the relative clause). As such, possessives and relative clauses function as reference-point constructions, since “the reference point’s high prominence and accessibility (. . .) allows it to serve as a basis for the identification of its target [i.e. the noun phrase as a whole, CM]” (De Smet 2007: 85; Langacker 1993: 7–9).

While the status of possessive phrases as reference-point constructions has been extensively discussed in, amongst others, Langacker (1993) and Willemse (2005), relative clauses have received less attention. As argued by Rijkhoff (2002: 175), relative clauses serve as localizing satellites because, as events which are located in time, they “give the referent of the relativized NP a place in the temporal dimension”. Thus, the noun phrase “the book” receives a more specified location by adding the relative clause “that I lost in the train yesterday” (Rijkhoff 2002: 175). In Section 4.4.2.2, I discussed reference-point constructions in the context of nominal gerunds with an agentive *of*-phrase, as in examples (72) and (85d). Possessive pronouns and relative clauses, however, can combine with both nominal and verbal gerunds. In my dataset, verbal gerunds are only rarely found with a possessive or genitive subject (10 out of 800 instances), while possessives are not uncommon with nominal gerunds (49 out of 800 instances). Similarly, only 3 verbal gerunds have a relative clause as postmodifier, as in example (91a), while 19 nominal gerunds, such as the one in (91b), are found with a relative clause.

- (91) a. The police are entitled to tell the person walking away from the scene to discontinue *using his filthy language, **which would in all likelihood constitute an offence under section 5 of the new Act.*** (BNC)
- b. I do see a positive step, though, and that this committee’s creation has saved the constitution of the USSR, because the union treaty has been disrupted, *the signing of it, **which was supposed to take place yesterday.*** (COCA)

Thus, in addition to the use of grammatical elements such as definite articles and demonstratives (as discussed in Section 4.4.2.1), nominal gerunds also make use of lexical expressions such as postdeterminers, possessives and relative clauses to facilitate the identification of their referents. Verbal gerunds, on the other hand, clearly dispose of fewer lexical or grammatical elements that can aid in the identification of their referents.

This does not mean, however, that nominal gerunds have a more complex internal syntax than verbal gerunds. On the contrary, it is the verbal gerund

which is typically considered to be the more complex gerund construction. In his diachronic study of the development of nominal and verbal gerunds during the Middle and Early Modern English period, De Smet (2008) identifies the verbal gerund's syntactic versatility as one of the main contributing factors to its spectacular rise in frequency in Early Modern English. From a functional point of view, verbal gerunds mainly competed with bare nominal gerunds, both constructions being able to establish reference to generic, non-controlled specific and clausally grounded specific entities. That the verbal gerund eventually ousted the bare nominal gerund, De Smet argues, can be attributed to the former's syntactic versatility, allowing more complex internal patterning than the existing nominal gerund (De Smet 2008: 90, 93). On the one hand, the verbal gerund's syntactic versatility allowed for the use of structures that had no nominal alternative, such as *being in love*. On the other hand, De Smet remarks that even markers of complexity that are acceptable with both nominal and verbal gerunds, such as the prepositional phrases in (92), are more frequently found with verbal than with nominal gerunds. Thus, De Smet (2008: 92) concludes, "verbal means of expression are preferred in complex gerunds even when the nominal alternative is perfectly viable".

- (92) a. The Lord kepe me from *doynge this thing vnto my maister yat is the lords aointed*. (1549, PPCEME, De Smet 2008: 92)  
 b. Humfrey Boucher, base sunne to the late Lorde Berners, did much coste in *translating of the priorie into a maner place* (1535–43, PPCEME, De Smet 2008: 92)

In order to assess whether De Smet's claim still holds for Present-day English, all instances of gerunds in my dataset were analyzed for their internal syntactic structure. A basic distinction was made between simple and complex structures, the former including instances which only consisted of a verb and another participant (the direct object in the case of verbal gerunds and the agent or patient in the *of*-phrase in the case of nominal gerunds), as in example (93). The complex category comprised instances with additional elements, such as adjectives or adverbs, prepositional phrases, possessive or oblique subjects, relative clauses etc., as in example (94), or instances with a more complex syntactic structure, such as the ditransitives in (95). Gerunds with complex object arguments, such as coordinated objects, objects of a clausal nature and objects with further prepositional complements, as in (96), were also classified as complex. Finally, I discerned an "in-between" category of verbal gerunds without direct (or prepositional) object but with one prepositional adjunct, like the ones in (97), which were labelled as "simple with preposition".

- (93) a. The Unemployed Flow Survey (. . .) suggests the contribution of *the ending of temporary jobs* to flows into unemployment is small. (BNC) [simple]  
 b. I'm sorry that I accused you of *taking them*. (BNC) [simple]
- (94) a. *The **proposed** uprating of income support **by a full 7 per cent. (sic) from next April*** will give increases substantially above the current level of inflation to around 3.5 million low-income pensioners (. . .). (BNC) [complex: adjective and adjunct]  
 b. His aim now, he said, is to break 70 today with the chance of *making the top 24 **for an automatic place next year***. (BNC) [complex: adjunct]
- (95) a. His duties were defined as being: to attend to the opening and closing, lighting and heating, dusting, washing out and general care of the premises; the trimming of the ivy so as to keep it clear of the spouting and the roof; *the keeping of the borders tidy*; and the cleanliness of the WCs. (BNC) [complex: complex syntax]  
 b. Circuit judge John Lee, 65, told a court that all men suffer because women enjoy *making their lives a misery*. (BNC) [complex: complex syntax]
- (96) a. Considerable service is done by the taking of actions ***which resolve points of law*** (. . .). (BNC) [complex: relative clause]  
 b. I couldn't help thinking ***that he must have made a mistake***. (BNC) [complex: that-clause]
- (97) a. Trading in "things" is the secondary consequence of *trading in song*. (BNC) [simple with preposition: no direct object but adjunct]  
 b. And let me try to illustrate it by *starting at the second point*. (COCA) [simple with preposition: no direct object but adjunct]

Table 9, then, shows the proportion of simple, complex and simple-with-preposition instances with nominal and verbal gerunds. As can be observed, verbal gerunds are not necessarily more complex than nominal gerunds – at least if all types of complexity are taken into account. Only if we count the simple-with-preposition instances as complex items, verbal gerunds are significantly more complex than nominal gerunds ( $p < 0.0001$ ,  $\phi = 0.17$ ). More interesting, however, are the ways in which nominal and verbal gerunds tend to be complex. Thus, Table 10 gives a break-down of the types of markers found with complex nominal and verbal gerunds.



**Table 9:** Simple and complex gerunds.

Structural complexity	Nominal gerund		Verbal gerund	
	n	%	n	%
Simple	356	44%	261	32%
Simple with preposition	na	na	94	12%
Complex	444	56%	445	56%
<b>Total</b>	<b>800</b>	<b>100%</b>	<b>800</b>	<b>100%</b>

**Table 10:** Complexity markers with nominal and verbal gerunds.

Complexity markers	Nominal gerund		Verbal gerund	
	n	%	n	%
Possessive / explicit subject	36	6%	15	3%
Adjective/ adverb	170	30%	34	6%
Apposition	5	1%	na	na
Relative clause	19	3%	3	1%
Object with embedded clause	45	8%	55	11%
Complex object	113	20%	105	20%
Adjunct	163	28%	133	26%
Clausal adjunct	25	4%	32	6%
Syntax	1	0.001%	63	12%
Free adjunct	na	na	7	1%
<i>wh-</i> or <i>that</i> -clause	na	na	74	14%
<b>Total</b>	<b>577</b>	<b>100%</b>	<b>521</b>	<b>100%</b>

Note that in some cases, the gerund contained more than one type of complexity marker. Thus, while there are 444 complex nominal gerunds in my dataset, Table 10 is based on 577 markers of complexity. This means that of the 444 complex nominal gerunds, 324 instances occurred with one type of marker, 107 with two and 13 with three types of complexity markers. As for the 445 complex verbal gerunds, 364 occurred with one type of complexity marker, 75 with two types and 6 with three types of markers, totaling to 521 types of markers in Table 10. If an example contained multiple markers of the same type (e.g. two adjectives or two adjuncts), they were grouped together as one marker of complexity.

The examples below illustrate the various features of complexity:

- Gerund with one or more adjectives (NG) or adverbs (VG):
  - Travelling mills came over in force from England and Scotland and commenced *the wholesale felling of demesne timber*. (BNC)

- But after a while, you have to concentrate on **just** *running the business*. (COCA)
- Gerund with possessive (NG) or explicit subject (VG):
  - This will help the struggle of the Palestinians in **their** *regaining of their rights*. (BNC)
  - It was a ritual which resulted in **the children** *feeling guilty and confused*. (BNC)
- Gerund with apposition (only with NGs):
  - That concentrated evil supreme, almost supernatural, cruelty teaches us that we are at *a parting of the ways*: **man's salvation or man's destruction**. (BNC)
- Gerund with complex syntax:
  - His duties were defined as being: 'to attend to the opening and closing, lighting and heating, dusting, washing out and general care of the premises; the trimming of the ivy so as to keep it clear of the spouting and the roof; **the keeping of the borders tidy**; and the cleanliness of the WCs'. (BNC)
  - "Skiing with feet and legs together for the sake of **keeping them together** is not the goal here," says Victor. (COCA)
- Gerund with one or more regular adjuncts:
  - Mere soothing words however may not be enough to *prevent the building of new walls* **across the middle of Europe**. (BNC)
  - Admittedly, *drawing a bright line of exclusion* **on the right** is not as easy as it once was to draw it on the left. (COCA)
- Gerund with one or more clausal adjuncts, such as purpose clauses:
  - It will prevent *the taking of prompt action* **to improve failing schools**. (BNC)
  - Adjusting VR2 gives a symmetrical waveform and you can do it by ear by *reducing the frequency* **so that only harmonics can be heard**. (BNC)
- Gerund with a clausal object, such as a wh-clause or that-clause (only with VGs):
  - The contracting states have a certain margin of appreciation in *assessing* **whether such a need exists** . . . (BNC)
- Gerund with complex object, i.e. complex direct object (VG) or of-phrase object (NG), such as coordinated objects or objects with adjuncts:
  - The development division has witnessed the end of an era with *the disbanding of* **the team of clerks of works**. (BNC)
  - The purpose of this study was to gain an understanding of risk-taking by exploring and *describing* **the perceptions and experiences of actual risk-taking of college students**. (COCA)

- Gerund with object with embedded clause, i.e. complex direct object (with VGs) or *of*-phrase object (with NGs) due to additional clausal adjuncts or relative clauses:
  - (. . .) they have failed to notice *the crumbling of the walls* **that have segmented Mexico and separated it from the United States**. (COCA)
  - The government had ordered Antonio Mateus out of this southeast African country (. . .) for *writing a story* **it said damaged Mozambique's image and constituted "active disinformation."** (COCA)
- Gerund with a free adjunct (only with VGs):
  - Don't get into any conversations about *sitting in the sunshine* **drinking coffee**, or the unforgettable paintings in the Memling Museum, or the daffodils dancing in the gardens at the Beguinage. (BNC)
- Gerund with a relative clause:
  - *The thawing of the Cold War*, **which made Namibian independence possible**, also presented an opportunity for an end to the Angolan civil war. (BNC)
  - In relation to public examination results in Britain, Gray (1982) has documented the difficulty of *interpreting the disputed results of two competing London schools, Highbury Grove and Islington Green*, **which sparked off considerable press comment and correspondence in early 1981**. (BNC)

While there is some overlap in the types of complexity markers found with nominal and verbal gerunds (e.g. both gerund types are quite frequent with adjuncts such as prepositional phrases of time and place), Table 10 shows that nominal and verbal gerunds are complex in very different ways. Nominal gerunds readily allow for adjectival modification, while adverbial modification is only rarely found with verbal gerunds. Verbal gerunds, on the other hand, more frequently embed other clauses within their structure, an option which is either not possible with nominal gerunds (in the case of clausal objects) or occurs less frequently (in the case of clausal adjuncts or objects with embedded clauses). Verbal gerunds furthermore display a more complex clausal syntax, typically being the only option for the expression of ditransitive and causative constructions or copular clauses.

Thus, De Smet's claims on the complexity of gerunds in Middle and Early Modern English are partly confirmed in Present-day English. Verbal gerunds undeniably show more versatility on the level of clausal syntax, having brought more complex syntactic patternings and the expression of clausal objects into the gerund system. It appears that it is especially these two features which set them apart from nominal gerunds in Present-day English. Still, if we take all types of complexity

markers into account, we observe that verbal gerunds are not necessarily more complex than nominal gerunds. Examples like (98a) and (98b) in fact illustrate that the syntax of nominal gerunds can be quite complex, as the nominal gerunds contain an adjective, multiple adjuncts and objects with embedded clauses. Moreover, complexity markers that are equally acceptable with nominal and verbal gerunds, such as adjuncts, do not appear to show a preference for verbal gerunds, as we find 188 adjuncts with nominal gerunds and 176 with verbal gerunds.

- (98) a. In so far as there is any ‘mirroring’ of form between ‘child’ and ‘firefly’ it is in *the mutual shaping of one nothingness (the pure openness of attentiveness so fierce it consumes a young body and mind) by another nothingness (the temporal thrownness of creature known as past and thought as future)*. (COCA, academic)
- b. Why didn’t he just go while she could still maintain some degree of composure, *this deliberate distancing of herself from the rapture that had possessed her before the telephone rang?* (BNC, fiction)

The fact that we still find a large number of “simple” verbal gerunds is not necessarily surprising, as verbal gerunds, at this stage, are so frequent that we may assume that they have also become the default option for cognitively more simple expressions. As will be shown in Chapter 8, verbal gerunds are more frequent in informal speech while nominal gerunds are more frequent in academic genres. While this might play a role in the presence of complexity markers, no significant correlation was found between simple verbal gerunds and spoken genres nor between complex nominal gerunds and academic genres.

## 4.6 Conclusion

This chapter aimed to offer a first way of looking at functional differences between nominal and verbal gerunds by considering their referential status. This perspective is not a new one, and has figured in synchronic and diachronic studies of gerunds before. While early synchronic referential studies aimed to show how verbal gerunds, despite their formally more clausal syntax, still fit into the referential paradigm of ordinary NPs (Schachter 1976; Heyvaert 2008), diachronic studies have emphasized the functional differences between nominal and verbal gerunds, noting that some of the referential strategies employed by verbal gerunds posit a challenge for the traditional framework of reference (De Smet 2007; Fonteyn 2016; Fonteyn and Heyvaert 2018).

Rather than replicating these studies, I have argued that we first need to take a closer look at the various concepts involved in establishing reference. Instead of focusing on the question of whether or not verbal gerunds can still be fitted into the nominal paradigm of referentiality, I pointed out that a model of referentiality is needed that integrates both nominal as well as more clausal features of referentiality. Current referential approaches, because they overwhelmingly rely on terminology associated with the nominal realm, tend to provide only a partial view of the differences between nominal and verbal gerunds. Broadening the referential scope, it was suggested, allows us to give a more complete picture of the different referential profiles adopted by nominal and verbal gerunds.

In contrast to the traditional framework of referentiality, which tends to merge concepts like definiteness, specificity and actuality, the model presented in this chapter considered each of these referential features as a separate layer that can function independently. While these three notions are indeed often largely intertwined in prototypical NPs, I suggested that teasing them apart could greatly further the analysis of less prototypical noun phrases such as gerunds. A first step involved redefining the notion of specificity in terms of von Stechow's (2002, 2003) notion of referential anchorage rather than in terms of identification, in order to distinguish it more clearly from the concept of definiteness. While mechanisms of referential anchorage proved difficult to verify objectively in the context of ordinary NPs, nominal and verbal gerunds provided us with more concrete examples of how entities can be linked to other discourse items. Referential anchorage moreover provided a more straightforward explanation of how in verbal gerunds specificity can be established without explicit markers of definiteness. A second refinement dealt with the role of mental spaces in a framework of reference. Traditionally, specificity has been associated with actual space, whereas non-specific entities are said to have a virtual status, as they do not form part yet of the speaker's reality. I showed, however, that this overlap cannot be maintained in the context of deverbal nominalizations such as gerunds. Because gerunds incorporate an existential dimension in their semantics, the notions of actuality and virtuality likewise receive an existential interpretation, which cannot be fully equated with that of (non-)specificity. Instead, I argued, actuality and virtuality constitute yet another independent layer in a framework of referentiality.

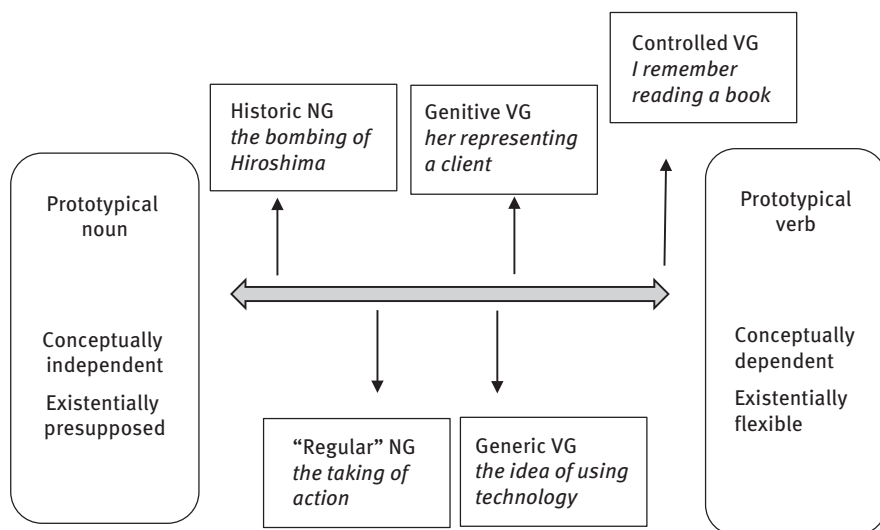
Applying the multilayered referential model in a quantitative analysis of nominal and verbal gerunds revealed some interesting differences between them that had hitherto gone unnoticed. While both gerund types seem to display a comparable distribution of traditional referential subtypes, they interact differently with the various layers of the multilayered model. While specificity and

existential status are two layers of referentiality that are found with both nominal and verbal gerunds, definiteness only seems to apply to nominal gerunds and a number of verbal gerunds with genitive subject. Comparable to prototypical nouns, nominal gerunds also show much more overlap between the notions of definiteness, specificity and actuality. Verbal gerunds, on the other hand, clearly illustrate how all three layers can function independently. They overwhelmingly prefer to establish specific reference by means of control relations, and hence disengage the concept of specificity from that of definiteness. The existential status of nominal and verbal gerunds provided us with additional evidence for the independent functioning of the layers: while nominal gerunds prefer to conceptualize actual(ized) entities, verbal gerunds turn out to display more existential flexibility, as specific verbal gerunds are not associated with a particular mental space, again loosening the relationship between actuality and specificity. As such, verbal gerunds engage more actively with the existential layer of the multilayered framework. Nominal gerunds, on the other hand, resemble prototypical nouns in their preference for existentially presupposed entities.

Interestingly, the features discussed above can be linked to varying degrees of “nouniness”. As mentioned earlier, much remains to be said about the functional side of Ross’ (1973) formal nouniness squish. While it is a well-known fact that nominal gerunds display more formal noun-like features than verbal gerunds, little is known about the potential repercussions of this formal gradience on a functional level. I argue that the referential profiles that have emerged from this study can be presented as forming a continuous hierarchy from more prototypical to less prototypical noun-like uses, depending on the degree to which the three main layers of the referential framework are intertwined, as is illustrated in Figure 4 below. At the most noun-like end of the cline, we find gerundive instances which typically form a unity of definiteness, specificity and actuality. Typical instances of these are the so-called “historic” nominal gerunds, as illustrated in example (99).

- (99) a. He had been released prior to *the signing of the October 1991 peace agreement*. (BNC)  
       b. Now on the anniversary of *the bombing of Hiroshima*, thousands of paper cranes made by children all over the world are sent to Japan and draped on the statue of Sadako. (COCA)

This specific type of nominal gerund can be considered more nouny than the prototypical nominal gerund, which displays somewhat more flexibility with



**Figure 4:** A functional cline of nominal and verbal gerunds along the referential axis.

regard to its markers of determination and existential status, as is illustrated in example (100):

- (100) a. [*The/a/Ø*] *preliminary cleaning of the painting in 1984* aroused a good deal of adverse criticism (. . .). (BNC)  
 b. It [will prevent/has prevented] *the taking of prompt action to improve schools*. (BNC)

Turning to verbal gerunds, then, it was observed that generic verbal gerunds and verbal gerunds with a genitive subject evoke the most noun-like profile within the verbal gerund category. In the latter case, the possessive subject seems to take over the function of a definite determiner, as these verbal gerunds typically refer to specific and actual entities. Generic verbal gerunds, on the other hand, receive the implicit nominal or “zero” grounding that is typically used with ordinary determinerless abstract nouns with generic reference (Langacker 2004: 104). Finally, at the least noun-like end of the cline we find subject-controlled specific verbal gerunds. These instances have moved away from the definiteness/indefiniteness distinction and instead establish specificity independently by means of alternative types of referential anchorage. It is precisely these mechanisms of referential anchorage that seem to allow the verbal gerund to establish specific reference independently of the mental space they are embedded in.

This functional cline also maps onto Langacker's (1987a, 2002, 2009) more abstract conceptual characterization of prototypical nouns and verbs. Similar to prototypical nouns, which are typically described as conceptually independent entities of which the existence is presupposed (Langacker 2009: 167; Givón 1984: 51), nominal gerunds tend to conceptualize referents which are not controlled by matrix clause participants and which are located in mental spaces that contain actualized situations. The referential conceptualization realized by verbal gerunds, then again, seems to be closely tied up with their atemporalized, clause-like status: while prototypical nouns profile objects with a stable existence, verbs or interactions are existentially more flexible and fundamentally transient (Langacker 2002: 32). As downranked atemporalized clausal heads (Heyvaert 2003), they depend on the clausal context in which they are used to fill in their relationship to the speech event, temporally as well as through control. Their non-finite status, in other words, makes them maximally flexible referentially speaking, and consequently, they show no preference for events conceptualized in actual or in virtual space. As such, verbal gerunds appear to have detached themselves from what Langacker (1987a, 2002, 2009) calls the epistemic concern of identification, which is typically associated with nominals. Instead, they increasingly interact with the epistemic concern of existence, which is more typical of clauses. The more "nouny" verbal gerunds discussed above can then be said to display less existential flexibility in the case of possessive verbal gerunds, or more conceptual independence in the case of generic verbal gerunds, since our conceptualization of a type of event typically does not depend on the semantic input of specific participants.

The main referential tendencies were confirmed by the analysis of localizing satellites and markers of complexity with nominal and verbal gerunds. While nominal gerunds deploy a wider range of elements that add to the identification of their referents (postdeterminers, possessives, relative clauses) or their description (adjectives), verbal gerunds distinguish themselves from nominal gerunds by their ability to embed additional clauses within their structure.

This chapter presented a first axis in the multifunctional analysis of nominal and verbal gerunds. It has allowed us to discern a number of differences between nominal and verbal gerunds already, both on a formal and functional level, and to gain more insight into functional gradience in the gerund system and how this relates to the more abstract-conceptual definitions of prototypical nouns and verbs as offered in Cognitive Grammar. The following chapters will refine and complement the findings from this chapter, starting with the aspectual analysis in Chapter 5.



## 5 Aspect

A second functional axis along which gerunds have been described is that of verbal aspect, which is concerned with the temporal orientation of the situation expressed by the verb. While referential studies zoom in on the typically nominal feature of discourse reference, aspectual analyses of the gerund pick up on the underlying clausal nature of the nominalization. So far, most attention has been devoted to the aspectual value of the *-ing* suffix, which is argued to impose a “holistic” construal on the event (Langacker 1991: 26) or signal ongoingness or imperfectiveness (Brinton 1995, 1998), as is the case in examples (101a) and (101b).

- (101) a. *The baking of the cake* is taking a long time. (Brinton 1995: 33)  
b. Elizabeth toiled for hours on end and her children remember *her machine going non-stop*. (Egan 2008: 112)

Still, many questions regarding the aspectual status of gerunds remain unanswered. Most claims that are found in the literature are rarely checked against authentic corpus data, and if they are, they do not tend to be based on quantitative analysis. It thus remains unclear, for instance, whether notions as ongoingness are characteristic of all gerunds or just a group of them, and if there are any significant aspectual differences between nominal and verbal gerunds. As yet, little is known about potential differences between present-day English nominal and verbal gerunds, since most studies either apply to nominal or verbal gerunds only, or are not meant to discriminate between both gerund types.

The present chapter aims to address these gaps.<sup>16</sup> By means of a detailed aspectual analysis of the 1,600 gerunds in my dataset, I will offer a more fine-grained picture of the aspectual profile of the gerund in general, as well as of the aspectual features that are unique to nominal and verbal gerunds. In doing so, this chapter aims to further shape our understanding of the prototypical functional profiles of nominal and verbal gerunds. The findings of the aspectual analysis will then be discussed in light of the position of nominal and verbal gerunds on the “nouniness squish” (Ross 1973), thus adding to our knowledge of the functional dimensions involved in processes of nominalization.

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<sup>16</sup> The research presented in this chapter is largely based on Heyvaert, Maekelberghe and Buyle (2019).

## 5.1 Aspect with gerunds

When browsing the literature on the English gerund, it strikes the eye that aspect is a recurring and much-discussed topic. The aspectual labels associated with gerunds revolve around the notions of durativity, atelicity, dynamicity and ongoingness or imperfectiveness, which are attributed either to nominal gerunds (e.g. Quirk et al. 1985; Iordăchioaia and Werner 2019), to verbal gerunds (Siegel 1998; Egan 2008; Alexiadou 2013) or to both gerund types (Brinton 1995, 1998).

### 5.1.1 Nominal gerunds

Lees (1960) uses the term “action nominalization” for the nominal gerund (also see Marchand 1969: 302; Chomsky 1970; Fraser 1970), because, unlike verbal gerunds, nominal gerunds cannot take stative verbs (Lees 1960: 64–65). Taylor (2002: 274), however, argues that the term “action nominalization” for nominal gerunds is misleading, as “[the] semantic import of the construction is not to designate an action, but to construe a normally perfective situation as an imperfect activity”. Thus, the nominal gerund distinguishes itself from other nominalizations not by referring to actions (nominalizations as *destruction* may also refer to actions), but by focusing on “the processual character of the nominalized situation” (Taylor 2002: 270). Similarly, Quirk et al. (1985) argue that, compared to other derived nouns, nominal gerunds zoom in on “the conduct of the action itself” (1985: 1551) or on “an activity that is in process” (1985: 1292), rather than on “the action as a whole event, including its completion” (1985: 1551), which they illustrate by means of the following examples:

- (102) a. *His exploring of the mountain* is taking a long time.  
       b. *His exploration of the mountain* took/will take three weeks.  
           (Quirk et al. 1985: 1551)

Borer (2005, 2013) describes the aspectual import of *-ing* with nominal gerunds in terms of an “anti-telicity” effect, arguing that nominal gerunds are impossible with achievements, which imply a culmination point, as in example (103). Evidence for the atelicity of nominal gerunds, she argues, is the fact that they cannot combine with the adjective “gradual”, as in (104), which would imply a change of state (Borer 2013: 162; also see Alexiadou et al. 2013: 80–81).

(103) \*The arriving of the train. (Borer 2005: 243)

(104) \*Kim's (\*gradual) formulating of several procedures. (Borer 2013: 162)

This reasoning is further developed in Alexiadou, Iordăchioaia and Soare (2010: 553), who note that nominal gerunds indeed tend to select atelic events, unless no other nominal suffix is available for the same structure. This is the case for a verb like *kill*, which, despite implying a culmination point, allows for a nominal gerund construction (e.g. *the killing of an innocent man*).

While Brinton (1991, 1995, 1998) initially argued in favor of the imperfectivizing value of the *-ing* suffix, which, she claimed, is similar to that of a clausal progressive, she later suggests that *-ing* makes a situation “durative, atelic, and dynamic” (Brinton 1998: 48, emphasis mine), but not necessarily imperfective. She supports her claim by pointing out that nominal gerunds can co-occur with perfective matrix verbs, which, she argues “should produce a logical incompatibility of –perfective and +perfective” (Brinton 1998: 48), cf. example (105). In contrast to Borer (2005, 2013), she argues that nominal gerunds do combine with achievements, but only when “the focus is on the durative (i.e., activity) phase of the situation” (Brinton 1998: 48), witness examples (106a) and (106b).

(105) *His escaping from the ropes* happened this afternoon. (Brinton 1998: 49)

(106) a. \**His dying/escaping/arriving* occurred at 5:00.

b. *His dying/death, escaping/escape, arriving/arrival* took several minutes.  
(Brinton 1998: 48)

Closely related to the alleged aspectual status of gerunds is said to be their nominal status as mass nouns, or, as Brinton (1998: 48) claims: “Evidence for the activity qualities of *-ing* nominalizations is the fact that they are generally mass” (see, for instance, also Allen 1966; Mourelatos 1978; Brinton 1991). Langacker (1991: 26) likewise analyzes *-ing* nominalizations as uncount or mass nouns, arguing that the affix “construes an event holistically” or in a “homogeneous way”, which results in “absence of bounding within the scope of predication”, as also found with uncount (mass or abstract) nouns.<sup>17</sup>

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<sup>17</sup> See Chapter 6 for a further discussion of the uncount status of (nominal) gerunds.

### 5.1.2 Verbal gerunds

The aspectual status of the verbal gerund has mostly been discussed in the context of clausal complementation. Egan (2008: 128) claims that two properties are schematic for *-ing* complements, viz. imperfectiveness and durativity (see the following section for a more thorough discussion of these parameters). Thus, he argues, in an example like (107), the situation designated by the verbal gerund “[admits] an element of *duration*” (Egan 2008: 120), since the subject of the sentence recollects the process of committing rather than the fact that Eva made a commitment:

(107) Eva recollects *making a commitment to Christ when she became a junior soldier*. (Egan 2008: 120)

A similar argument is made in Alexiadou (2013: 135), who argues that verbal gerunds “realize imperfective outer aspect”. At the same time, Alexiadou (2013: 135) and Alexiadou, Iordăchioaia and Soare (2010: 552–553) remark that verbal gerunds, in contrast to nominal gerunds, are compatible with telic events, as in example (108).

(108) *The train arriving at 5 pm* is unlikely. (Alexiadou, Iordăchioaia and Soare 2010: 553)

In sum, while the aspectual status of gerunds has received a fair amount of attention in the literature, the picture that emerges is a rather confusing one. The labels of imperfectiveness, durativity and atelicity are often used interchangeably, although they apply to fundamentally different concepts: imperfectiveness entails that a situation is *viewed* as ongoing, while durativity and atelicity say something about the *inherent* characteristics of a situation (viz. its duration and lack of an endpoint), regardless of whether or not it is viewed as ongoing (see Section 5.2). This chapter will differentiate between the *internal temporal structure* of the situations gerunds designate (i.e. ontological or situation aspect, distinguishing between states, activities, accomplishments, achievements and semelfactives), and the *perspective* that they take on situations, e.g. by representing them as temporally bounded or in progress (viewpoint aspect). Secondly, the examples that are used to illustrate the aspectual features attributed to gerunds are often inauthentic, which problematizes some of the observations that are drawn from them. In examples like (102a) and (106b), for instance, it is the context rather than the gerund itself which suggests ongoingness or durativity (e.g. “is taking a long time”, “took several minutes”). Yet, there are no indications that gerunds indeed show a

tendency to occur in such contexts, and, consequently, that gerunds themselves tend to conceptualize situations that are durative or ongoing. The fact that the aspectual semantics of gerunds has tended to be studied in isolation, with little attention to their internal syntax (e.g. presence of modifiers or types of participants) and the contexts they occur in (e.g. semantics of matrix verb) is yet another problem with the existing literature. This chapter will therefore also examine how contextual elements influence the aspectual status of gerunds, and whether or not these elements function differently with nominal and verbal gerunds.

## 5.2 Aspectual classification

The linguistic field of aspect, or “the semantic domain of the temporal structure of situations and their presentation” (Smith 1997: 1), is extensive and characterized by a wide range of interpretations and classifications. Influential theories of aspect have been proposed by, among others, Vendler (1967), Verkuyl (1972), Bach (1986), Smith (1997), Sasse (2002), Rothstein (2004, 2008), Declerck (2006) and Croft (2012). The aspectual framework used in this chapter primarily draws on work by Smith (1997) and Declerck (2006). My analysis in addition partly relies on Depraetere’s (1995) discussion of the difference between (un)boundedness and (a)telicity.

Most studies on aspect distinguish between two broad aspectual categories: (1) situation/lexical/ontological aspect or *Aktionsart* and (2) viewpoint or grammatical aspect. In what follows, I will discuss each subtype and elaborate on the different subcategories that figure in them.

### 5.2.1 Situation aspect or inherent aspectual features

Situation or lexical aspect is especially concerned with the lexical material that is present in a verbal expression, and “the way the lexical material in the verb phrase determines one or more inherent characteristics of a kind of situation” (Declerck 2006: 29). Analyses of situation aspect therefore typically start out from a classification of verbs into various event types (Rothstein 2004: 1; Croft 2012: 33). One of the most influential classifications of situation aspect is that by Vendler (1967), who distinguishes between states, activities, accomplishments and achievements. This classification was further elaborated in, amongst others, Declerck (2006), who defines verb types in terms of four basic ontological features, viz. dynamicity, durativity, telicity and transitionality. Smith (1997), then, adds a fifth subtype of situation aspect to Vendler’s classification,

which is labelled semelfactive (also see Carlson 1981; Talmy 1985; Jackendoff 1991; Brinton 1998 and Xiao and McEnery 2005 for a classification that includes semelfactives; also see Croft’s 2012 class of “cyclic achievements”). Table 11 provides an overview of the situation types and the various ontological features associated with them.

**Table 11:** Situation aspect (Smith 1997, Declerck 2006).

Situation type	Ontological features			
States	[-dynamic]	[+durative]	[-telic]	n.a.
Activities	[+dynamic]	[+durative]	[-telic]	n.a.
Accomplishments	[+dynamic]	[+durative]	[+telic]	n.a.
Achievements	[+dynamic]	[-durative]	n.a.	[+transition]
Semelfactives	[+dynamic]	[-durative]	n.a.	[-transition]

The various categories and labels presented in Table 11 form the descriptive framework that has been used in this chapter. All nominal and verbal gerunds in the dataset were analyzed in terms of the ontological features of stativity, durativity and telicity or transitionality, and classified as states (109a), activities (109b), accomplishments (109c), achievements (109d) or semelfactives (109e).

- (109) a. It was a ritual which resulted in *the children feeling guilty and confused*. (BNC)
- b. But after a while, you have to concentrate on *just running the business*. (COCA)
- c. The artist Goldsbrough Anderson took Stoker as his model for William II in a panel depicting *the building of the Tower of London*, painted for the Royal Exchange. (BNC)
- d. (. . .) the importance of royal patronage in *the granting of military authority* gave a considerable advantage to those whose birth gave them natural access to kings. (BNC)
- e. A message was announced by *the dinging of a little bell*. (COCA)

The first ontological feature, [+ or – dynamic], classifies a situation as stative, as in (110a), or dynamic (110b-c). A situation is stative when it is not agentive and conceived of as unchanging. While a stative situation does not need input of energy to continue, a dynamic situation requires a continuous input of fresh energy. Typically, dynamic situations are conceptualized as consisting of a number of slightly different stages, as in (110b).

- (110) a. A staff nurse who began by working on an elderly care ward part-time from 9am to 2pm is now working virtually full-time, despite *having five children*. (BNC)
- b. People surrounding the czar often recalled after the revolution that in the most tragic moments of his reign -- at the time of the surrender of Port Arthur and *the sinking of the fleet at Tsushima* (. . .). (COCA)
- c. "Only by walking the actual ground where men fought and died," he insists, "do you gain an emotional appreciation of their ordeal, something that can't be gained from *sitting in your armchair reading a book*." (COCA)<sup>18</sup>

The second feature in Declerck and Smith's aspectual framework, [+ or – durative], distinguishes between durative situations, as in (111a), and punctual situations, as in (111b). Situations are durative when they are conceived of as having a certain duration or as needing more than a moment to actualize. Punctual situations, however, only need one moment to actualize. In order to differentiate punctual situations from durative ones, one can add a duration adverbial or adjective to the gerund phrase (Declerck 2006: 59). While the nominal gerund *the hate-filled shouting of our parents* in (111c) can be complemented by the duration adverbial *for two hours* or the adjective *two-hour*, this is not possible for the other nominal gerund in the sentence (*\*the two-hour shattering of a dish*), which represents a punctual situation.

- (111) a. The political culture is barren ground for *the nurturing of liberal values and institutions*, say Western observers. (COCA)
- b. *Losing a fight* is a very traumatic experience. (COCA)
- c. My brother and I were awakened by *the hate-filled shouting of our parents* and *the shattering of a dish*. (COCA)

The ontological feature of telicity, then, classifies a situation as telic, as in example (112a) or as atelic, as in (112b). Telic situations are conceived of as tending towards an inherent endpoint without which the situation is incomplete and at which it naturally comes to an end. The situation described in (112a), for instance, will reach an endpoint when the warehouse has been built. Telicity furthermore implies that the event also moves towards this endpoint, involving different

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<sup>18</sup> Gerunds based on what Quirk et al. (1985: 205–206) classify as stance verbs (e.g. *live, stand, sit, lie*) were grouped with the dynamic category if they had an animate subject, as in (110c). There were no examples of stance verbs with inanimate subject in the dataset.

phases. The atelic situation in (112b), on the other hand, does not imply a natural endpoint, nor does it progress over different phases. Since punctual events presuppose the existence of an inherent endpoint, telicity does not function as an additional distinctive feature with achievements and semelfactives. A common way to distinguish between telic and atelic situations is the use of time-frame vs. time-span adverbials (Vendler 1967; Dowty 1979; Smith 1997). While time-frame adverbials such as *in an hour* are compatible with telic events, time-span adverbials like *for an hour* typically combine with atelic situations. In (112a), we can add the adverbial *in a year* to the verbal gerund *building a high-bay warehouse* because the situation can be understood as being completed at some point in time. The gerund in (112b), on the other hand, does not imply a point of completion, and hence more naturally combines with the adverbial *for a year*.

- (112) a. Designers should check locally to determine whether the Local Act is still operative in the area proposed for *building a high-bay warehouse*. (BNC)
- b. Instead of *remaining in the relative security of her home*, however, Lalie returns in secret to the well night after night seeking to understand what she is becoming. (COCA)

A final distinction is that between transitional and non-transitional situations, as illustrated in (113a-d). As can be observed in Table 11, transitionality is a feature that was applied to non-durative or punctual events only: in restricting the notion to punctual events, I combine Declerck's (2006) interpretation of the notion of transition with Smith's (1997) distinction between achievements and semelfactives.<sup>19</sup> Achievements, which have been labelled as transitional, imply that a single punctual transition from one state to another takes place (i.e. they "result in a change of state", Smith 1997: 30). In (113a), for instance, we find a transition from "being open" to "being closed", while the situation in (113b) involves a transition from being alive to being dead. Non-transitional punctual events or semelfactives, as in (113c) and (113d), on the other hand, do not entail this change of state. They are "single-stage events with no result or outcome" (Smith 1997: 29).

- (113) a. His appointment as a Bishop, was in the immediate aftermath of *the closing of the Second Vatican Council*. (BNC)
- b. Is it true you were involved in -- in *the killing of somebody*? (COCA)

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<sup>19</sup> I thus applied the notion of telicity to durative situations and transitionality to punctual ones, but see Croft (2012: 61–62) for a discussion of transitionality with durative situations.



- c. At first I saw nothing, then as I watched I could just discern *a faint nodding of the head*. (BNC)
- d. While he waited, Arkady listened to what sounded like an American relating a tedious story interspersed by explosions and *the popping of small arms*. (COCA)

It has been a matter of debate whether linguistic material other than the verb should be taken into account when analyzing situation aspect. The analysis that is presented here follows Smith, who states that situation types are conveyed by the verb constellation, which she defines as “a main verb and its arguments, including subject” (1997: 2). Mourelatos similarly claims that specifying the relevant aspectual category necessarily involves “the nature of the verbs’ arguments, i.e. of the subject and of the object(s), if any” (1978: 421) and so does Depraetere (1995: 9), who, following Verkuyl (1972), states that particular constituents have an effect on the *Aktionsart* of a sentence.

As pointed out by Verkuyl (1972) and Declerck (2006: 58, 63), the arguments of the main verb can have a significant impact on the parameters of durativity and/or telicity. The situation represented by the nominal gerund in (114a), for instance, would in its prototypical form (*the shooting (of somebody)*) be analyzed as an achievement ([+dynamic] [-durative] [+transition]). However, since the direct object is an unspecified plural count noun (*peaceful demonstrators*), the situation becomes durative, viz. the repeated shooting of multiple demonstrators creates a situation that can only be conceived of as needing more than one moment to actualize. The same effect can be obtained by means of an uncountable argument. In (114b), for instance, *the dumping (of something)* would normally be analyzed as an achievement, but the uncountable object (*nuclear waste*) allows for an analysis that identifies the situation as durative, viz. the repeated dumping of nuclear waste needs more than one moment to actualize. When plural or uncountable arguments thus create durativity, the resulting situations become what Declerck has labelled “durative hypersituations”, i.e. situations “consisting of a number of repeated punctual ‘subsituations’” (2006: 36). In my dataset, all instances like (114a) and (114b) have therefore been analyzed as activities ([+dynamic] [+durative] [-telic]). Note that the argument creating a durative hypersituation may also be a specified plural count noun, as in (114c). In that case, the argument creates durativity and includes telicity. While the direct objects in (114a) and (114b) do not suggest an inherent endpoint (e.g. the shooting of peaceful demonstrators could in theory continue endlessly), the argument in (114c) creates durativity as well as telicity, viz. the shooting of two monks takes more than one moment to actualize and has a clear inherent endpoint (namely the moment when the two monks have been shot). The situation represented in (114c) has, consequently, in my analysis

not been classified as an achievement or an activity, but as an accomplishment ([+dynamic] [+durative] [+telic]).

- (114) a. I was amazed at the way almost all the British newspapers combined to blame *the shooting of peaceful demonstrators* in the Ciskei, South Africa, on the dead demonstrators. (BNC) [achievement > activity]  
 b. Third World countries are especially worried about *the dumping of nuclear waste*. (BNC) [achievement > activity]  
 c. (. . .) following an apology from the central military commander and the head of the religious affairs department over *the shooting of two monks* at a demonstration on Aug. 8 in Mandalay. (BNC)  
 [achievement > accomplishment]

In the same vein, I also took into account the impact of adverbial complements on the situation aspect of gerunds, because, as Declerck (2006: 63) remarks, they too potentially have an impact on the telicity of a situation (also see Mourelatos 1978: 421). The situation in (115a), for instance, can be analyzed as durative and atelic, while the locative complement in (115b) adds an inherent endpoint and turns the situation into an accomplishment.

- (115) a. He's gonna come in the car and she doesn't fancy *walking in the night*. (BNC)  
 b. (. . .) educators may increase the likelihood that their students will choose an active option such as *walking to the mall* over the more sedentary alternative of being chauffeured by an adult. (COCA)

Importantly, by including the impact of arguments and adverbial complements in my analysis of the situation aspect of gerunds, the parameters used for this analysis differ from those used in Brinton (1995), where only “the ‘prototypical’ situation denoted by the verb” (Brinton 1995: 34) is considered, and, in Brinton (1998), where “the effect of nominal arguments and temporal adverbials on aktionsart, as well as the effect of noun modifiers on countability” are ignored (Brinton 1998: 46–47). In view of the fact that “nominalizations typically display a range of meanings, with particular nuances determined by the semantic characteristics of the base combined with the syntactic context in which the nominalization is used” (Bauer, Lieber and Plag 2013: 206), I have thus systematically included the broader context into the aspectual analysis. As will become clear later on, it is precisely these additional linguistic elements that turn out to be distinctive and shed new light on the aspectual status of nominal vs. verbal gerunds.

### 5.2.2 Viewpoint aspect or the speaker's perspective

Viewpoint aspect is concerned with “how the speaker wants to *represent* the internal temporal structure of a situation” (Declerck 2006: 28, emphasis mine) and functions “like the lens of a camera, making objects visible to the receiver” (Smith 1997: 61). Unlike situation aspect, which focuses on the inherent temporal meaning of an event or state, viewpoint aspect is about how the temporal semantics of a situation are *construed*. While some aspectual theories restrict viewpoint aspect to the overt use of grammatical forms (think of the English progressive), other studies interpret viewpoint aspect as an extra layer of aspectual meaning which is added by certain contextual features (Declerck 2006: 30). The current analysis follows the latter interpretation of viewpoint aspect, viz. as “a particular contextual ‘construal’ of a situation” (Declerck 2006: 37). Specifically, I will look at two types of viewpoint aspect, viz. whether a situation is represented as (1) temporally (un)bounded, and (2) single, iterative or repetitive.

#### 5.2.2.1 (Un)boundedness

Viewpoint aspect can, firstly, be said to relate to “whether or not a situation is described as having reached a temporal boundary” (Depraetere 1995: 2–3), resulting in situations that are either bounded or unbounded.<sup>20</sup> According to Depraetere (1995: 3), a sentence is bounded if it represents a situation as having reached a temporal boundary, irrespective of whether the situation has an intended or inherent endpoint or not (i.e. whether it is telic or atelic). Boundedness at clause level can be realized through the use of, for instance, a punctual verb in combination with a non-progressive tense (e.g. *I met John at 5 o'clock*), adverbials (e.g. *Judith played in the garden for an hour*; *Julian lived in Paris from 1979 until May 1980*), and the present perfect (e.g. *I have lived in Paris*) (Depraetere 1995: 3). Unbounded clauses, on the other hand, do not represent situations as having reached temporal boundaries, as is the case in *She lives on the corner of Russel Square* (stative) and *She is writing a nurse's rhyme* (progressive). Depraetere thereby points out that (un)boundedness, which refers to the representation of a situation, should be clearly separated from (a)telicity, which is concerned with a situation's inherent characteristics. *Playing in the mud*, in (116a), for instance, is inherently atelic, but

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**20** Some aspectual studies (Comrie 1976; Dahl 1985; amongst others) choose to distinguish between perfective and imperfective aspect, rather than between boundedness and unboundedness. (Im)perfectivity is more closely connected to the interpretation of viewpoint aspect as conveyed by overt grammatical forms, but similarly classifies the representations of situations as actualized in their entirety (perfective) or as ongoing (imperfective).

because it is used in the present perfect tense, focusing on the resultant state of the playing, the viewpoint is bounded. Likewise, the activity *lobbying* in (116b), it could be argued, can be analyzed as bounded despite its inherent atelicity, since the aim of the lobbying (*this reaffirmation of Hanoi's scheme*) has been realized and therefore provides a temporal boundary. The situation represented in example (116c), on the other hand, is unbounded, as the accomplishment *preparing a thesis* is viewed as ongoing and as not yet having reached a temporal boundary. The situation described in (116c) can therefore be analyzed as unbounded and ongoing despite its being a telic accomplishment. Even though the situation has an *intended* endpoint (when the thesis has been prepared), it is *construed* as not having reached this endpoint (the student is still busy preparing) (see [116d] for a comparable example).

- (116) a. “Why are your hands so dirty?” “*I’ve been playing in the mud.*”  
(Depraetere 1995: 5)
- b. This reaffirmation of Hanoi’s scheme was given despite *the lobbying of the Thai Foreign Minister, Sitthi Sawtsila*. (BNC)
- c. *In preparing a thesis at the master’s or the doctorate level*, the student is clearly engaged in research. (BNC)
- d. *She is writing a nursery rhyme.* (Depraetere 1995: 3)

The situations in (116a-b) and (116c-d) allow for a clear-cut analysis in terms of (un)boundedness, but some instances either lack clear indicators of temporal boundaries or occur in ambiguous contexts. Example (117a), for instance, occurs in what I will call a “neutral” context, which fails to indicate whether the act of second-guessing is to be interpreted as having reached a temporal boundary (the second-guessing has taken place in the past and is now finished) or should be seen as ongoing (the decisions are still being second-guessed). Likewise, the situation in example (117b) is not explicitly presented as bounded or unbounded. This is mainly due to the fact that the situation is located in a virtual mental space, which fails to specify a particular viewpoint on the situation. Thus, future, hypothetical or counterfactual situations are, in my analysis, typically analyzed as having neutral viewpoint. This is in line with Fonteyn’s (2019: 141) aspectual analysis of gerunds, which argues that in the case of virtual situations “it is impossible to determine whether the event boundaries are included as well (cf. Croft 2012: 139)”.<sup>21</sup> The situation in example (117c), in

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<sup>21</sup> Declerck (2006: 78) takes a different stance towards virtual situations, such as the event in a sentence like *I will answer these three letters tomorrow*. While he acknowledges that

contrast, can be viewed as both bounded and unbounded. On the one hand, the phrase “at the time of” seems to imply unboundedness, zooming in on the moment the will was made. On the other hand, the context implies that the will has already been made, which would also allow for a bounded interpretation. Thus, unlike in examples (117a) and (117b), both boundedness and unboundedness seem to be implied here. Instances like these have therefore been labelled as ambiguous.

- (117) a. The critics attacked the 'detailed time-wasting and expensive procedure involved in the proposals', and deplored *the second-guessing of the decisions of responsible Boards which they implied*. (BNC)
- b. Mere soothing words however may not be enough to prevent *the building of new walls across the middle of Europe*. (BNC)
- c. (. . .) a small sum of money to his mother, still alive at the time of *the making of the will*. (BNC)

When applied to gerundive nominals, the interpretation in terms of temporal boundaries is obviously, even more so than with finite clauses, dependent on either the linguistic context (i.e. the clause in which the gerund is used or the broader linguistic context) or pragmatic inferencing.<sup>22</sup> Table 12 lists some of the contexts in the dataset that gave rise to either a bounded or an unbounded reading.

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“boundedness is a question of actualization” and that in the case of future situations, “the speaker can never be quite certain that the situation is actually going to actualize this way”, he argues that we should still consider the situation as bounded, not in the actual world but in a future imagined world.

<sup>22</sup> Depraetere (1995, 1996) and Declerck (2006: 73) distinguish pragmatic inferences of boundedness from so-called “linguistically bounded” situations. In a clause like *John wrote six letters*, the linguistic context clearly indicates that the situation has a temporal endpoint, viz. the moment when the six letters have been written. A clause such as *John was in the library*, however, is often interpreted as bounded due to the past tense, but this interpretation is cancellable by adding further context (e.g. *Two minutes ago, John was in the library, so you will probably find him there*). In the latter case, then, the situation is argued to be pragmatically bounded but linguistically unbounded. I will not, however, adhere to this distinction. In cases where the context does not provide enough information as to the bounded- or unboundedness of the situation, as with the nominal gerund *the second-guessing of the decisions* in example (117a), the viewpoint aspect was labelled as neutral.

**Table 12:** Contextual clues in the analysis of (un)boundedness.

<b>Bounded</b>	
the result of V-ing	[the restructuring (sic) of our courts] has allowed for greater accessibility by plaintiffs
following V-ing	(. . .) his appointment as a bishop, was in the immediate aftermath of [the closing of the second Vatican Council]
V-ing is reported on	(. . .) so realistic was the picture in the illustrated London News of [the torpedoing of the ironclad Blanco Encalada in the Chilean revolutionary war of 1891]
V-ing is remembered	(. . .) he recalls the earliest sensations of light and heat, the invasion of infernal forces and [the coming of celestial light]
historic event	(. . .) commemorate the anniversary of [the passing of the 1967 Abortion Act]
<b>Unbounded</b>	
adverbials	Simultaneously with [the holding of the general election in September 19]
V-ing takes place ‘at the same time’ as the main verb, which is in the present or progressive tense or is stative	the senator and Chuck who were helping his father (. . .) supervise [the unloading of supplies]
in V-ing	[In preparing a thesis at the master’s or the doctorate level], the student is clearly engaged in research  in [the decentralizing of money management], ambiguities also arose in connection with buildings
zooming in on V-ing as it is going on	By January 1803 [the building of the infirmary] was progressing well
V-ing continues/remains/is annual, permanent, continual etc.	In the aftermath of Mr Horton’s own departure [ruthless slashing of the payroll] continues: 10% of the remaining workforce are to go tell the person (. . .) to discontinue [using his filthy language]
states	Amongst these four Kent are alone in [having little money]

### 5.2.2.2 Repetitiveness

The speaker may not only present a situation as temporally (un)bounded, they may also home in on the repetition of a situation (iterativity or repetitiveness). According to Declerck (2006: 36), a situation is non-repetitive “when the reference is to a single individual actualization of a situation”, as in (118a) and (118b), and repetitive if a situation is viewed as “repeating itself on *one or more occasions* or as consisting of a number of subsituations of the same kind” (2006: 35, emphasis mine), as in (118c). Iterativity, which can be seen as a subcategory of repetitiveness, is then defined as the description of a situation as repeating itself on *a particular occasion* or as consisting of the *successive* occurrence of several instances of identical subsituations. The current analysis will distinguish between iterative and repetitive situations rather than subsuming both under repetitive viewpoint aspect. In (118d), for instance, the successive spitting of the fire has to be interpreted as occurring on one particular occasion and has thus been analyzed as iterative. Instances such as (118c), on the other hand, have been classified as repetitive, since it is more likely that women have been seeking abortions on different, non-successive occasions.

Iterative and repetitive situations have also been referred to as heterogeneous or nonhomogeneous, meaning that the situation consists of various phases rather than one uniform, unchanging state (Declerck 2006: 45). Non-repetitive situations can be either heterogeneous (e.g. *drawing a circle*) or homogeneous (e.g. *wearing a scarf*). While in the case of *drawing a circle*, “there is no portion (stage, slice) of the situation of drawing a circle that is itself an instance of drawing a circle”, all parts of *wearing a scarf* are the same as the situation as a whole (Declerck 2006: 55). Note that, due to the repetitiveness or iterativity that they imply, durative hypersituations (activities such as *the shooting of peaceful demonstrators* or accomplishments like *the shooting of two monks*, which are created through the use of a plural [or uncount] direct object) are necessarily heterogeneous.

In some cases, the repetition of a situation can be seen as “characteristic of the referent of the subject noun phrase over an extended period of time” (Declerck 2006: 37), as in (118d). These habitual situations have been grouped together with the regular repetitive situations.

- (118) a. Whilst Reg here is responsible for *the running of our investigation*, he reports to me. (BNC) [non-repetitive activity, homogeneous/continuous]  
 b. It was an arduous process, *the writing of that story*, but Luke took great pride in it. (COCA) [non-repetitive accomplishment, heterogeneous]

- c. Through the nineteenth century American common law decisions uniformly reaffirmed that women committed no offense in *seeking abortions*. (COCA) [repetitive, heterogeneous]
- d. A conspiratorial silence fell over the group punctuated only by the youthful sobbing and *the spitting of the fire*. (BNC) [iterative, heterogeneous]
- e. He refers to customs in his school days such as *the keeping of the Day of the Festival of Bridget*. (BNC) [habitual, heterogeneous]

The interaction between the parameters of repetitiveness, homogeneity, heterogeneity and the various aspectual situation types is summarized in Table 13.

Summarizing, then, all 1,600 gerunds in the dataset were, in addition to being analyzed in terms of situation aspect, also described in terms of the view-point which the speaker assumes, and assigned to the categories (1) bounded/unbounded/neutral or ambiguous and (2) non-repetitive/repetitive/iterative. The results of the analysis are presented in the following section.

## 5.3 Corpus analysis

### 5.3.1 Situation aspect in nominal and verbal gerunds

To establish the situation type of the nominal and verbal gerunds in the dataset, each gerund was analyzed according to the parameters of dynamicity, durativity, and, if applicable, telicity and transitionality. An overview of the distribution of these parameters over the 1,600 instances of nominal and verbal gerunds is presented in Figure 5. The first two categories show the proportion of stative and dynamic gerunds, while the second two give an overview of durative and punctual gerunds. The fifth and sixth category show how telicity is distributed over all durative instances, while the final two illustrate the distribution of transitionality over the punctual gerunds.

The overview makes clear that, overall, situations represented by gerunds are most often dynamic (95%) and durative (79.2%). If the situations are durative, they tend to be atelic (72%), while punctual events are most often transitional (88.6%). In addition, Figure 5 shows that verbal gerunds are significantly more often stative than nominal gerunds ( $p < 0.0001$ ,  $\phi = 0.18$ ), while nominal gerunds, when punctual, are more often non-transitional ( $p = 0.0058$ ; however, with a very small effect size [ $\phi = 0.07$ ]). There are no significant differences with regard to durativity and telicity.



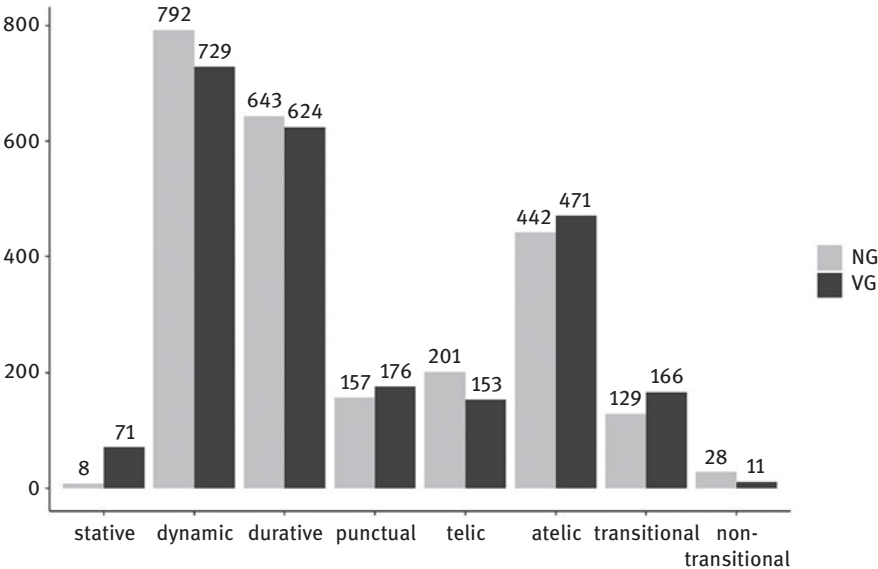
Table 13: Overview repetitiveness.

Viewpoint aspect	non-repetitive		repetitive	
	repetitive <sup>a,b</sup>		iterative	
Example	Achievement <i>winning the election</i>	Accomplishment <i>drawing a circle</i>	Activity <i>wearing a scarf</i>	Activity <sup>c</sup> <i>selling plots in that area</i>
Homogeneity?	n.a.	heterogeneous	homogeneous	heterogeneous
Durative hypersituation?	/		✓	

<sup>a</sup>In what follows, I will use the term *repetitive* in reference to the subcategory that complements iterativity, i.e. when referring to a situation repeated on more than one occasion.

<sup>b</sup>Because repetitiveness always adds durativity to a situation, I have only discerned repetitive accomplishments and activities, and not achievements or semelfactives.

<sup>c</sup>The verbs underlying iterative situations are typically semelfactives (e.g. *twitch, chirp, flash*), as these situation types lend themselves well to iterative conceptualizations (cf. it does not entail a permanent transition, but rather a return to the original “rest state” [Croft 2012: 60]).



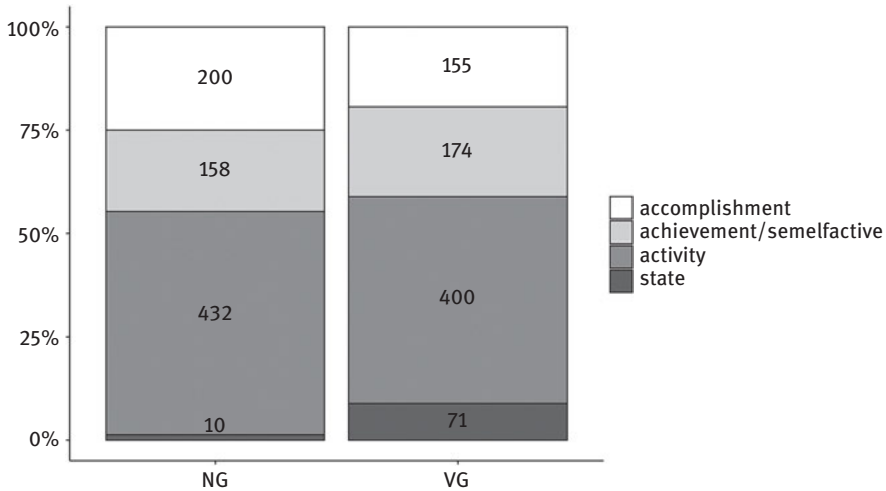
**Figure 5:** Ontological features with nominal and verbal gerunds.

Figure 6 shows how these parameters cluster into the four main situation types – states, activities, accomplishments and achievements/semelfactives<sup>23</sup> – over the two gerund types. Both within the category of nominal and verbal gerunds, the largest group turns out to be that of activities, with 54% of the nominal gerunds and 50% of the verbal gerunds designating an activity. Among nominal gerunds, the second largest group is that of accomplishments (25%), followed by achievements/semelfactives (19.6%). Among verbal gerunds, it is achievements/semelfactives that form the second largest group (21.6%), followed by accomplishments (19.3%). States constitute the smallest group with both nominal and verbal gerunds (1% and 8.8%).<sup>24</sup>

What do these findings tell us about situation aspect in the English gerund? Do they confirm Brinton’s (1998) claim that the *-ing* suffix “has the effect of converting a situation into an activity, of making the situation durative, atelic, and dynamic”, and do they confirm the suggestion that “states acquire a dynamic sense and semelfactives a durative (i.e. iterative) sense, while with achievements

<sup>23</sup> Since only few instances were analyzed as semelfactives, all punctual situations have been gathered into one category.

<sup>24</sup> In view of the fact that state-like processes are also much less frequent among non-nominalized verbs (see Biber et al. 1999: 365), this should not come as a surprise.



**Figure 6:** Situation type with nominal and verbal gerunds.

and accomplishments, the focus is on the durative (i.e., activity) phase of the situation” (1998: 48)? The findings firstly suggest that Brinton’s claim that *-ing* has the effect of converting a situation into an activity is an overgeneralization: although the majority of both nominal and verbal gerunds are activities, a considerable number of gerunds designate accomplishments and achievements/semelfactives. Against Brinton (1998), moreover, the latter do not necessarily acquire or zoom in on durativity: the majority of instances that were classified as achievements and semelfactives were punctual and did not add durativity to the situation, as illustrated in (119a) and (119b), nor did the accomplishments necessarily focus on “the process leading up to the end point” (Brinton 1998: 48), witness, for instance, the example in (119c).

- (119) a. First Millwall won the war – then they got round to *winning this brutal but utterly compelling match at The Den*. (BNC)  
 b. For example, *a jerking of the hand to the face* may seem nonsensical to a Touretteur at first. (COCA)  
 c. In a grant proposal written prior to *the making of the film*, Hammer described her interest in X-ray footage. (COCA)

The findings moreover show that nominal gerunds are not less frequently telic or punctual than verbal gerunds and thus do not display an “anti-telicity effect” (Borer 2005, 2013; Alexiadou, Iordăchioaia and Soare 2010). Borer’s argument

that nominal gerunds cannot combine with a change-of-state adjective like “gradual” is also refuted, as is illustrated in example (120).

(120) The march of civilizations from China, India, and Persia through Egypt, Greece, and Rome to modern civilization is for him the story of *the gradual unfolding of individual human consciousness* and the growing awareness and exploration of the physical sense world. (COCA)

While the existence of a large group of dynamic, durative and atelic situations represented by gerunds seems to be in line with the observation that *-ing* “occurs most naturally with activities” (Brinton 1995: 39), it is interesting to point out that, especially among nominal gerunds, a substantial part of these activities can be traced back to the nominal argument in the *of*-phrase. When the *of*-phrase contains a plural or uncount noun phrase, it creates what was identified in Section 5.2.2 as a durative hypersituation, i.e. a heterogeneous activity that originates from essentially telic or punctual situations, as in example (121a) (see Table 13 for the difference between homogeneous and heterogeneous activities). Brinton only discerns continuous (or homogeneous) activities, as in (121b), and iterative activities, as in (121c), and ignores the effect of nominal arguments in her aspectual analysis (1998: 46–47). The present analysis reveals that, in doing so, she overlooks a significant number of verbal and especially nominal gerund activities: as shown in Figure 7, only 29% of nominal gerund

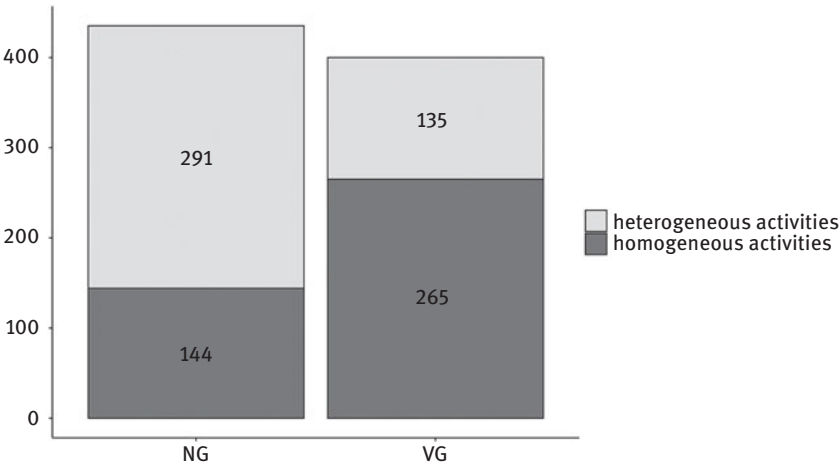


Figure 7: Types of activities with nominal and verbal gerunds.

activities represent homogeneous situations (as opposed to 55% of verbal gerund activities).

- (121) a. The third objective would be to aid in *the recruiting of new employees*. (COCA)  
 b. I enjoy *watching the colors blend together*. (COCA)  
 c. The only sound was *the chirping of birds*, the far-off call of jays, and the quiet splashing of water. (COCA)

This is confirmed in Table 14, which provides an overview of the types of arguments found with nominal and verbal gerunds. A distinction is made between mass (122a), plural (122b), plural count (122c) and single objects (122d) and, in the case of verbal gerunds, instances without objects (122e) and a miscellaneous category with fixed phrases and clausal objects (122f).

**Table 14:** Types of arguments with nominal and verbal gerunds.

Argument	Nominal gerund		Verbal gerund	
	n	%	n	%
mass	120	15%	56	7%
plural	356	44.5%	126	15.8%
plural count	33	4.1%	12	1.5%
single	291	36.4%	328	41%
no object	0	0%	186	23.2%
other	0	0%	92	11.5%
<b>Total</b>	<b>800</b>	<b>100%</b>	<b>800</b>	<b>100%</b>

**Note:** The “other” category with verbal gerunds includes clausal objects (e.g. *showing that he’s right*) and fixed phrases (e.g. *being part of, taking care of*).

- (122) a. Most say they started drinking in their early teens, usually as a way of *copng with repeated abuse*. (COCA) [mass object]  
 b. *The drafting of satisfactory consultancy provisions* is not without difficulty. (BNC) [plural object]  
 c. (. . .) you can’t get the attention except by *making two or three good films at once*. (COCA) [plural count object]  
 d. You – both of you – must have known that a twin sister could be *the saving of her life!* (BNC) [single object]  
 e. By *writing for a national radio network*, I would enjoy the best of both worlds. (BNC) [no object]

- f. Tins also have the disadvantage of *allowing you to contaminate the paint with dirty brushes*. (BNC) ['other': clausal object]

While nominal gerunds most frequently combine with plural *of*-phrase participants, verbal gerunds are more commonly found with single objects.<sup>25</sup> Likewise, nominal gerunds more often combine with mass or uncount objects, which also tend to create durative hypersituations, as in example (123):

- (123) The core of the scheme is a tax of 20 French francs per tonne on *the dumping of all non-toxic household and industrial waste which currently amounts to approximately 70 million tonnes per year*. (BNC)

In sum, when we compare the results of the aspectual analysis for nominal and verbal gerunds, the only significant difference with regard to situation aspect appears to be that verbal gerunds are more frequently states ( $p < 0.0001$ ,  $\phi = 0.18$ ). While nominal gerunds appear to be more frequent as accomplishments ( $p = 0.005$ ), the effect size is negligible ( $\phi = 0.06$ ). That verbal gerunds more frequently conceptualize states is not surprising, as typical stative verbs such as *being* and *having* are not or only rarely found with nominal gerunds. Nominal gerunds, on the other hand, often combine with deadjectival verbs such as *lowering* or *narrowing*, as in examples (124a-b). In most cases, the context implies that the action has reached or may reach an endpoint (e.g. the moment when the tension has lowered and the eyes have narrowed), thus adding telicity to the situation. As a result, most instances with deadjectival verbs have been analyzed as accomplishments.<sup>26</sup>

- (124) a. This comes only when, after *a lowering of tension*, the boys are summoned from London to the newly constituted Samavia and Marco, expecting to see his father as a loyal subject near the throne. (BNC)  
 b. Sir Daniel was already at the door, shrugging into his heavy black overcoat with its expensive sheen and elegantly cut lines, and he looked at them both with only *the faintest narrowing of his eyes* altering his expression of bland good will. (BNC)

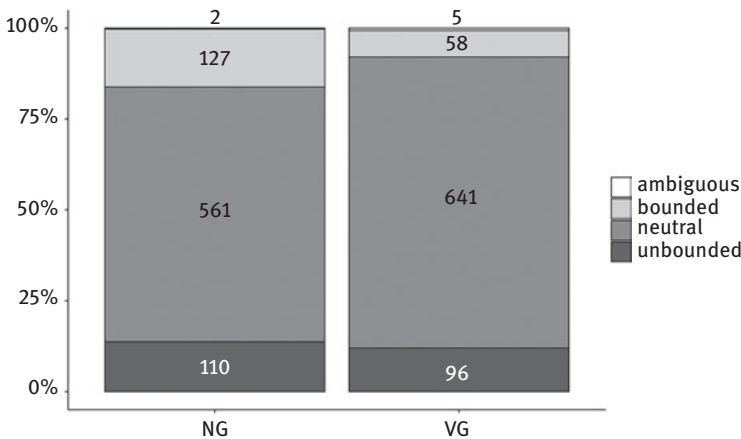
<sup>25</sup> While Table 14 only focuses on the objects found with nominal and verbal gerunds, repetitiveness can also be created by the subject or controller of the gerund, as in (a):

(a) I told her to discourage the young women from *coming to the well*.

<sup>26</sup> Also see Chapter 7 for a discussion of the base verbs attracted to nominal and verbal gerunds.

### 5.3.2 Aspectual viewpoint in nominal and verbal gerunds

The analysis of nominal and verbal gerunds has revealed that a majority of nominal as well as verbal gerunds designates activities, but both also allow for accomplishments, achievements/semelfactives and, to a lesser extent, states. Nominal gerunds designate durative hypersituations or activities implying repetitiveness or iterativity significantly more often than verbal gerunds. In this section, I will consider how this internal temporal structure is *represented or viewed* in gerunds. The distribution of the first set of viewpoint categories – bounded, unbounded, neutral and ambiguous – over the two gerund types is mapped out in Figure 8. Each subtype is illustrated in the examples in (125). It can be observed that the majority of nominal and verbal gerunds can be classified as neutral (70% and 80% respectively), which suggests that gerunds and the contexts they occur in usually lack explicit markers of completeness as well as ongoingness. The distribution in Figure 8 shows that only a small percentage of the situations represented by nominal and verbal gerunds are viewed as unbounded (13.7% and 12%) or bounded (15.8% and 7.2%). A minority has been classified as ambiguous (2.5% of the nominal gerunds and 6.2% of the verbal gerunds). The examples below illustrate the distinct subtypes.



**Figure 8:** Viewpoint aspect with nominal and verbal gerunds.

- (125) a. From *reading this book* I was not convinced that Wentwood actually aspires to more than that. (BNC) [bounded]
- b. There were also some devices which counterbalanced *this continual splitting of family resources*, such as the partnership system of the family firm, marriage between cousins, and setting up trusts to provide income for daughters and wives (. . .). (BNC) [unbounded]
- c. I refer to the adversarial relationship between those dedicated to economic development and those dedicated to *saving the environment*. (COCA) [neutral]
- d. Edinburgh itself witnessed a great abjuration of the favourers of Martin at Holyrood Abbey in 1532 and *the burning of five heretics in 1539*. (BNC) [ambiguous: *witness* zooms in on the situation itself, but the situation is located in the past]

When focusing exclusively on instances analyzed as activities, a similar picture emerges, as illustrated in Figure 9. Again, the majority of nominal and verbal gerund activities occur in contexts which do not explicitly mark the situation as ongoing or completed. These findings contest the idea that nominal gerunds zoom in on activities represented as ongoing rather than completed (Quirk et al. 1985: 1551; Iordăchioaia and Werner 2019) and contradicts the claim that *-ing* functions as an imperfectivizing suffix, or that it occurs most naturally with activities that are shown as ongoing (Brinton 1995: 39).

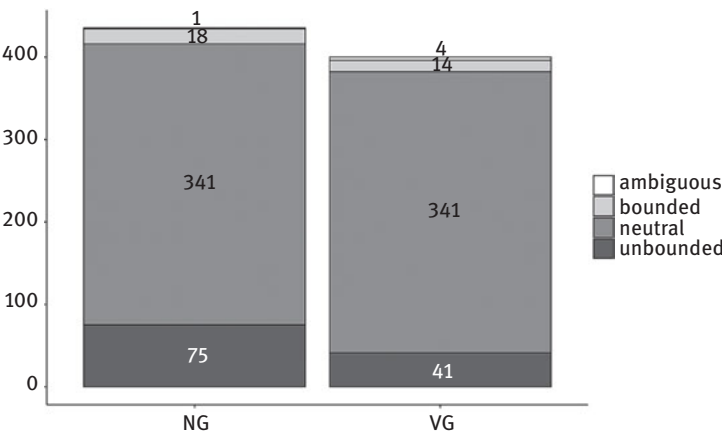


Figure 9: Viewpoint aspect with activities.



With regard to punctual event verbs, Brinton (1995: 39) claims that *-ing* “has the effect of reiterating the event, making the situation durative”. When considering the punctual situations in the dataset more closely (they were classified as achievements/semelfactives, cf. Section 5.2.1), the results show that iterativity is mostly found with nominal gerunds representing prototypical semelfactive situations, as in (126a). Importantly, however, iterative interpretations can be overruled by contextual elements, which might indicate that the iterativity effect does not depend on the suffix *-ing* itself but on contextual elements. In (126b), for instance, *the shaking of the earth* can be analyzed as an iterative nominal gerund, but the presence of the adjective *first* cancels the iterative interpretation. In other words, the representation of the situation as happening only once can be attributed to the contextual element *first*. Brinton’s claim is further challenged by the observation that iterativity appears to be extremely rare with verbal gerunds. Despite the presence of the *-ing* suffix, verbal gerunds are not likely to be viewed iteratively. Only one verbal gerund instance in the dataset was classified as iterative, cf. *shaking* in example (126c). More common are examples such as (126d), in which a single rather than iterative interpretation of the situation designated by the verbal gerund seems to be more natural. Verbal gerund alternates of iterative semelfactive nominal gerunds moreover require structures that are unlikely to be used (consider, for instance, *the flashing of their torchlights* versus ?*the torchlights’ flashing*).

- (126) a. There followed *the flashing of their torchlights* and muttered excuses. (BNC) [semelfactive – iterative]
- b. Let’s remember that the first big shock that British sportsmen got, *the first shaking of the earth* which intimated that we weren’t so hot at these things as we used to be was in professional sport. (BNC) [semelfactive – non-repetitive]
- c. In severe cases, they may respond by *shaking and urinating uncontrollably when they come near the surgery*. (BNC) [semelfactive – iterative]
- d. The stimulus to breathe is *their face hitting the air*. (COCA) [semelfactive – non repetitive]

Let us finally consider Brinton’s claim that, with achievements and accomplishments, “the gerund form focuses on the process leading up to the endpoint” (1995: 34). The results of the analysis show that instances like these are only scarcely attested, and, if they occur, it is in gerunds in clearly unbounded contexts. In (127), for instance, the reading process receives focus because of the unbounded context, which zooms in on the manner of the reading. Similarly, the unbounded context in (128), created by the main verb *continues*, is responsible for highlighting the

process of slashing the payroll. As can be observed in Figure 10, only a small number of nominal and verbal gerunds representing accomplishments and achievements/semelfactives occur in unbounded contexts, suggesting that instances like the ones in examples (127) and (128) are a minority. Moreover, since viewpoint aspect can be largely accounted for by contextual information, durativity-effects with accomplishments and achievements seem to be attributed to contextual factors rather than to the inherent aspectual value of the *-ing* suffix (e.g. the use of the matrix verb *continue*, which suggests ongoingness).

(127) *His monotone reading of the two-hour work report switched to an angry, haranguing tone when he came to the section denouncing Britain.* (BNC) [accomplishment – unbounded]

(128) *In the aftermath of Mr Horton’s own departure ruthless slashing of the payroll continues.* (BNC) [achievement – unbounded]

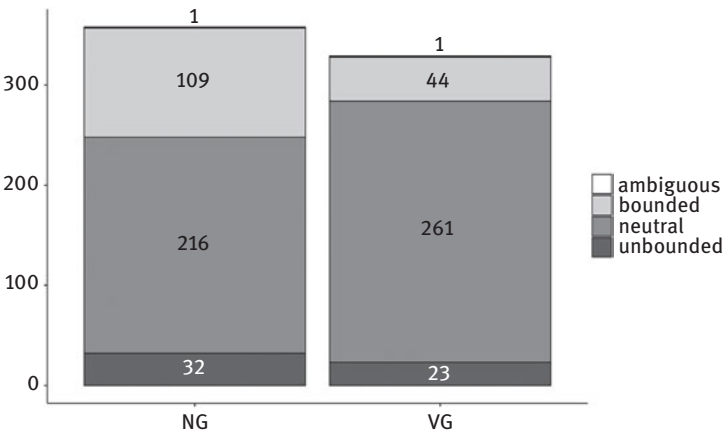


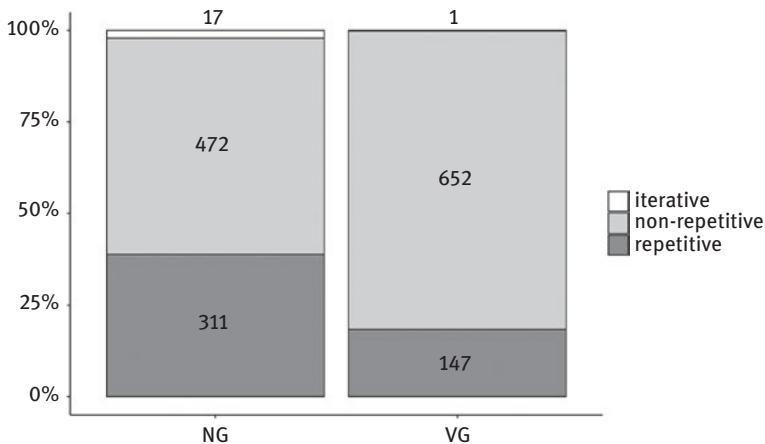
Figure 10: Viewpoint aspect with accomplishments, achievements and semelfactives.

When we focus on the comparison between nominal and verbal gerunds in terms of viewpoint aspect, it can be observed that nominal gerunds are more often bounded than verbal gerunds ( $p<0.0001$ ,  $\phi=0.13$ ), while verbal gerunds are significantly more often neutral ( $p<0.001$ ,  $\phi=0.11$ ). While nominal gerunds are slightly more often unbounded than verbal gerunds, the difference is not significant. It should be noted, however, that a large number of verbal gerunds are unbounded because they conceptualize states, as in (129a), states being significantly associated with unbounded

viewpoint aspect ( $p < 0.0001$ ,  $\phi = 0.30$ ) (also see Allen 1966: 202). With nominal gerunds, on the other hand, unboundedness does not typically arise from the situation or lexical aspect of the verb, but rather from contextual elements, such as the preposition *during* in example (129b). In fact, unbounded nominal gerunds are shown to be significantly associated with adverbial adjunct functions ( $p < 0.0001$ ,  $\phi = 0.12$ ), while verbal gerunds are not.

- (129) a. A major area of concern remains safety, with Novaceta carrying the burden of *having the worst record among Courtaulds-owned and joint venture companies*. (BNC)  
 b. Other news today, at Edwards Air Force Base in California something went wrong during *the test-firing of a new rocket motor for the Titan IV rocket* and the motor blew up on the test stand. (COCA)

The findings furthermore show that repetitiveness and iterativity occur more frequently with nominal gerunds than with verbal gerunds ( $p < 0.001$ ,  $\phi = 0.22$  for repetitiveness and  $p < 0.001$ ,  $\phi = 0.09$  for iterativity), as illustrated in Figure 11 and example (130).



**Figure 11:** Repetitiveness and iterativity.

- (130) a. The development of new sub-fields by division due to increased specialisation, and by *the merging of fields to produce multi-disciplinary studies*, has resulted in the publication of new journals which reflect the changes in the ways in which the science has developed. (BNC) [repetitive]

- b. There was *a shuffling of feet* and muttered conversation as the Unifiers slowly left the chapel. (BNC) [iterative]

### 5.3.3 The aspectual status of gerunds – interim conclusions

Summarizing, then, the results of the aspectual analysis show that the claim that *-ing* in gerunds imposes a particular aspectual profile on its source verb phrase, identifiable as dynamic, durative, atelic and homogeneous (as illustrated in 131a) (Brinton 1995, 1998), is an overgeneralization. Figure 6 showed that both nominal and verbal gerunds not only designate activities, but also states, accomplishments and achievements/semelfactives. These results are in line with the diachronic aspectual analysis of nominal and verbal gerunds in Early and Late Modern English carried out by Fonteyn (2019). Although the majority of nominal and verbal gerunds are activities in both Early Modern English (49.7% and 48.4%) and Late Modern English (54.5% and 42.1%), a considerable number can be analyzed as states, accomplishments or achievements. Fonteyn's conclusion, that "neither nominal nor verbal gerunds show any *absolute* restrictions when it comes to aspectual types" (2019: 146) is therefore confirmed by the analysis of Present-day English data. Interestingly, the analysis has also revealed that, even though activities constitute the largest group with both types of gerunds, many of them are repetitive and hence heterogeneous, consisting of multiple subevents (cf. Figure 7). Homogeneous activities are in fact a minority among nominal gerunds. Brinton's suggestion that *-ing* has the effect of backgrounding a situation's telicity or punctuality by making punctual situations durative through iterativity (as in [131b]) and by highlighting the process leading up to the endpoint in telic situations (as in [131c]) has not been confirmed by my findings either. Iterativity effects turn out to be limited to semelfactive nominal gerunds and are not found with all punctual instances. The fact that these iterativity effects can be overruled by external contextual features moreover suggests that these durativity effects cannot be attributed solely to the suffix *-ing*. As regards the backgrounding of telicity with accomplishments, then, this turns out to happen only occasionally, viz. when the situations represented by nominal and verbal gerunds are viewed as unbounded, as in examples (127) and (128) above.

- (131) a. The porter has a kilt poking out from under his jacket, and Macduff is stuck with *wearing a raincoat on top of his dinner suit* for the whole show. (BNC) [activity – unbounded – non-repetitive]  
 b. A courting robin offered his intended a worm and she accepted with *an excited quivering of wings*. (BNC) [semelfactive > activity – iterative]

- c. In *announcing the appointment*, Bush described Card, a former state legislator in Massachusetts, as "a friend of many years" (BNC) [accomplishment – focus on the process of announcing]

The present findings have, finally, also put into question the claim that *-ing* is an imperfectivizing suffix that presents situations as ongoing (Quirk et al. 1985: 1551; Brinton 1995: 33–34). Most nominal and verbal gerunds do not turn out to represent a situation as in the process of reaching a temporal boundary. In fact, most of them are neutral, assuming a perspective on the designated situation that is neither completed nor ongoing. Similar findings for older data are reported in Fonteyn (2019): in her analysis, 21.6% of Early Modern English nominal gerunds and 39.3% of Early Modern English verbal gerunds are unbounded, while 51.7% and 41.6% are neutral. In the dataset for Late Modern English, 8.7% of all nominal gerunds and 29.7% of all verbal gerunds are unbounded, while 46.9% and 54.3% are neutral.

The suffix *-ing* itself, it can be concluded, does not have clear aspectual import: instead it seems to merely form an atemporal situation type or template (Heyvaert 2003; De Smet 2010; De Smet and Heyvaert 2011) which is temporally and aspectually neutral and has the effect of “lifting a clausal event to the level of type-space and of forcing its specificities as an event token to be derived exclusively from the lexicogrammatical context in which it is used” (De Smet 2010: 1169). The lexicogrammatical features that are involved in the aspectual interpretation of gerunds, the analysis has shown, include the base verb, the arguments and adverbial phrases construed with it, and the broader clausal context in which the gerund comes to function.

## 5.4 Aspectual behavior and nominal status

What can the quantitative aspectual analysis of gerunds presented above contribute to the discussion of the differences between nominal and verbal gerunds? When we survey the findings, it strikes the eye that nominal and verbal gerunds actually share quite a number of aspectual features: they both preferably represent activities but also allow for accomplishments, achievements, semelfactives, and, though in the case of nominal gerunds only rarely, states. The aspectual perspective taken in them is mostly neutral, i.e. with no clear indication as to whether the situation they designate is bounded or unbounded. At the same time, the analysis has also revealed a number of subtle, but interesting differences: nominal gerunds occur significantly more often with accomplishments, and nominal gerund activities are significantly more often heterogeneous (i.e. durative hypersituations

implying repetitiveness or iterativity) than the activities designated by verbal gerunds. Furthermore, nominal gerunds are significantly more often marked for temporal bounding (bounded or unbounded) by contextual elements. Verbal gerunds, on the other hand, more frequently represent states and are as such more flexible than nominal gerunds in terms of allowing for a wide range of aspectual types. With respect to viewpoint aspect, verbal gerunds are shown to be more indeterminate in viewpoint, while unboundedness with verbal gerunds is more often related to the aspectual features of the base verb (in the case of states) than to contextual elements. These findings are summarized in Table 15.

**Table 15:** Aspectual differences between nominal and verbal gerunds: an overview.

Nominal gerunds	Verbal gerunds
More accomplishments	More states
More hypersituations	More single/individual events
More explicitly (un)bounded	More indeterminate in viewpoint

How do the aspectual profiles of nominal and verbal gerunds relate to those of nouns and verbs/clauses and can their differences in aspectual behavior be said to reflect their distinct positions on the nouniness squish (Ross 1973), as do their formal and referential features (cf. Chapters 2 and 4)? To answer that question, it is interesting to return to the functional dimension of Lehmann’s nominalization hierarchy. According to Lehmann (1982, 1988), deverbal nominalization is typically accompanied by *loss of individuation* and *increasing typification*. While less nominalized constructions retain more of the individuality of the original situation, more nominalized constructions will tend to generalize or typify the proposition, eventually representing it as a more abstract concept rather than as an individual event with a temporal dimension (Lehmann 1982: 68). A nominalization will thus tend to denote an entity with “einer räumlichen Situierung und zeitlichen Ausdehnung” [spatial situatedness and temporal vagueness] (Lehmann 1982: 79). Givón (1979: 320–322), on the other hand, describes the aspectual differences between nouns and verbs in terms of time-stability, with nouns typically denoting time-stable entities while verbs tend to conceptualize situations that involve a change of state.

While nouns and verbs in some respects thus tend to display fundamentally different aspectual behavior, some of them also have particular aspectual features in common, witness the many discussions that have been devoted to the analogy between events and count nouns, and between states/activities and mass nouns

(see, among others, Mourelatos 1978; Bach 1986; Jackendoff 1990, 1991, 1992; Brinton 1991, 1995, 1998). This analogy, it has been argued, underlies particular deverbal nominalization patterns in English, with verbs designating accomplishments, achievements and semelfactives preferably yielding count nouns (e.g. *arrive*>*arrival*; *perform*>*performance*) and verbs designating states and activities giving rise to mass nouns (e.g. *live*>*living*; *run*>*running*) (Brinton 1998). Aspectually, then, count nouns are described as nouns that have precise limits, are intrinsically countable, lack in homogeneity, and are not subdivisible nor additive (part of an apple is not an apple, nor is part of one's eating an apple equivalent to eating an apple; two parts of an apple do not constitute an apple, nor do two parts of eating an apple constitute the event of eating an apple). Mass nouns, on the other hand, are noncountable, do not have precise limits, are homogeneous and infinitely subdivisible and additive (any part of mud is mud and any part of sleeping is sleeping; two parts of mud constitute mud and two parts of sleeping constitute sleeping) (Brinton 1998: 39–40).

I argue that some of the differences between nominal and verbal gerunds that are outlined above can be related to Lehmann's and Givón's aspectual account of nouns vs. verbs, but that the results of the present analysis also suggest that merely labelling them both as mass nouns fails to capture a number of subtle aspectual differences between them. First, in line with Lehmann's description of nominalized constructions, nominal gerunds could be argued to generalize more often over a specific situation, by creating durative hypersituations that generalize over repeated situations. As such, they show the loss of individuation and increase of typification that Lehmann associates with more nominal aspectual behavior. Verbal gerunds, on the other hand, occurring more often as homogeneous activities, seem likelier to retain some of the individuation of the original state of affairs. In the nominal gerund in (132a), for instance, the verb *buy* does not convey a durative and atelic situation by itself; rather, it is the presence of the plural object *microcomputers* which creates durativity and places the originally telic verb *buy* in an atelic context. While the situation represented by the nominal gerund thus consists of a succession of numerous punctual events – hence the heterogeneity – the nominal gerund generalizes across them and thus moves away from the individual instances of *buying*. The situation referred to by the verbal gerund in (132b), on the other hand, is internally homogeneous and refers to an individuated situation.

- (132) a. (. . .) the Department of Industry, which through the Micros in Schools Project subsidises *the buying of microcomputers* in primary and secondary schools. (BNC)

- b. The porter has a kilt poking out from under his jacket, and Macduff is stuck with *wearing a raincoat on top of his dinner suit* for the whole show. (BNC)

An apparent counterexample to the analysis of nominal gerunds as showing a higher degree of typification and a lower level of individuation of situations is formed by the historic nominal gerunds, as in (133a-b). Historic nominal gerunds conceptualize situations that have acquired the status of historic events, and are therefore par excellence linked to a *specific* point in time and space (also see the conclusion from Chapter 4). While they can still be said to have a temporal dimension, their focus has, however, clearly shifted from representing an event as it unfolds over time to providing a fixed temporal and spatial anchor point, thus manifesting a higher degree of temporal stability, which is in line with Givón's (1979) description of prototypical nouns.

- (133) a. The Paris-Bonn axis, it is true, was about to be formalized, with *the signing of the Franco-German treaty in January 1963*. (BNC)
- b. The 'self-coronation' of Ceauescu was a gesture in imitation of *Napoleon's crowning of himself in 1804*. (BNC)

As regards the analysis of gerunds as mass nouns, the findings suggest that nominal and verbal gerunds behave differently in terms of homogeneity and bounding, two of the features underlying their alleged mass noun status: a majority of the nominal gerunds designating activities turn out to be heterogeneous, and are more often bounded than unbounded; verbal gerunds, on the other hand, show more homogeneous than heterogeneous activities, which are overwhelmingly neutral in terms of temporal boundaries (i.e. they are not explicit about temporal boundaries). Even if, in line with Brinton's analysis of iterative situations, we analyze heterogeneous activities as mass noun-like (resembling mass nouns designating heterogeneous stuffs, like *rice, sand, grass, salt*, Brinton 1998: 42), the use of nominal gerunds with clear temporal bounding is interesting. It confirms the diachronic tendencies found by Fonteyn (2019) in Modern English data and could be interpreted as a more holistic, object-like or "nominal" construal of a situation, including reduced (temporal) processual meaning (also see Demske 2002 and Hartmann 2014 for German). Note that the more "nouny" character of nominal gerunds also allows them to make use of nominal aspectual tools to enrich their aspectual semantics. By means of an indefinite article, for instance, nominal gerunds can individuate a particular event, as in (134). Indefinite nominal gerunds will be the topic of Chapter 6.



(134) What causes offence is that he merely represents *a shifting of values* for the mass of young people. (BNC)

Nominal gerunds also exploit adjectival modification to impose a certain viewpoint aspect on the situation referred to. In (135a), for instance, the adjective *relentless* stresses the unboundedness and durativity of the event, while *annual* in example (135b) creates repetitiveness.

- (135) a. Jack nodded briefly and returned to *his relentless checking of the boy's condition*. (BNC)  
 b. (. . .) *the annual climbing of Croagh Patrick*, pilgrimage and penance at Lough Derg. (BNC)

The aspectual features of nominal and verbal gerunds and their categorial values are summarized in Table 16:

**Table 16:** Nominal and verbal gerunds: aspectual and categorial features.

Aspectual features		Categorial features	
Nominal gerund	Verbal gerund	Nominal gerund	Verbal gerund
Four situation types (act./acc./ach./semf.)	Five situation types (act./acc./ach./semf./ state)	More aspectual restriction	More aspectual flexibility
More hypersituations	More single/individual events	Typification	Individuation
More explicitly (un)bounded	More neutral in viewpoint	More temporal delimitation / stability	More temporal flexibility
		Noun-like construal	Verb-like construal

## 5.5 Conclusion

This chapter has laid out the second functional axis of the multifunctional analysis by subjecting the 1,600 instances in my dataset to an aspectual analysis. It was thereby assumed that gerunds, nominal as well as verbal ones, in one way or another designate durative, atelic and dynamic situations, which tend to be viewed progressively, i.e. as ongoing – this being what most accounts of their aspectual features had thus far claimed.

The results showed that most gerunds, nominal as well as verbal, designate activities, but they also allow for achievements, semelfactives and accomplishments and states. In addition, most do not contain any explicit marking as to whether the situation they represent is bounded or ongoing (i.e. they are neutral). This made possible a first modification of the general assumption regarding the aspectual features of gerunds: while a majority of gerunds designate durative, atelic and dynamic situations or activities, only a minority of them explicitly mark them as ongoing, progressive. These results are in line with Fonteyn's (2019) findings for Modern English gerunds. The analysis in addition allowed us to fill in some of the details of the differences between nominal and verbal gerunds: repetitive and iterative events prefer nominal gerunds, which, compared to verbal gerunds, also show a significant preference for explicit marking of the presence or absence of temporal boundaries. Verbal gerunds, on the other hand, designate states significantly more often than nominal gerunds and are, more so than nominal gerunds, neutral in terms of temporal boundaries. In general, the analysis of authentic gerunds provided evidence for the claim that the suffix *-ing* itself does not have particular aspectual value and that it is essential to take into account the entire lexicogrammatical context of the gerund (arguments, modifiers, matrix clause) to interpret its aspectual value correctly.

The present analysis also sheds new light on the categorial properties of nominal vs. verbal gerunds. It was argued that the high number of nominal gerunds designating durative hypersituations (generalizing across a number of punctual situations) might be interpretable as symptomatic of the loss of individuation and the increasing typification of nominal gerunds, as also attested diachronically (Fonteyn 2019). In general, the category of nominal gerunds seems to exploit the aspectual options that exist within the noun phrase category much more than do verbal gerunds: in addition to fully lexicalized count nouns (e.g. *a building, painting, feeling*), it also allows for constructions with verb-like semantics that behave like mass nouns to varying degrees, ranging from homogeneous activities (e.g. *I'm responsible for the running of the business*) to heterogeneous and/or well-delineated situations (e.g. *we've had a*

*parting of the ways*). Nominal gerunds in addition make use of a number of nominal aspectual strategies such as the use of the indefinite article for particularization and the use of adjectival modification. The aspectual analysis presented here, in short, provides a strong argument for describing the aspectual features of gerunds not in terms of one single aspectual value attributed to the suffix *-ing*, but based on authentic examples and including the full lexicogrammatical context that they figure in. From a categorial perspective, the distinction between nominal and verbal gerunds then turns out to be subtle and involving a complex mixture of (partly overlapping) aspectual features and aspectual preferences, again demonstrating the functional-semantic flexibility of the English gerundive system.



## 6 The indefinite nominal gerund

Part II of this book has thus far offered a bird's eye perspective on the referential and aspectual functioning of Present-day English nominal and verbal gerunds. This chapter will make use of some of the concepts that have emerged from the previous chapters in order to study a particular type of nominal gerund, viz. nominal gerunds with an indefinite article.<sup>27</sup> The goal of this chapter is twofold. Firstly, I wish to show how a referential and aspectual analysis can further our understanding of the diachronic rise and synchronic functioning of an as yet underresearched gerund construction. The chapter will thus serve as a test case for the functional parameters developed in the second part of this book. By exploring the functional niche occupied by the Present-day English indefinite nominal gerund, moreover, this chapter aims to provide a clearer picture of the functional gradience that exists within the nominal gerund category.

The occurrence of indefinite nominal gerunds is interesting in a number of respects. Because nominal gerunds are considered to be mass or, more generally, uncount nouns (Brinton 1991, 1995, 1998; Langacker 1991), combinations with an indefinite article, as in examples (136a-c), seem somewhat surprising.

- (136) a. There is also *an indirect targeting of the Christian community* when extremists open fire at policemen and soldiers assigned to guard churches. (COCA)
- b. We deal with the issues of relapse and the kinds of stresses that will come up to cause *a similar seeking of that relief*. (COCA)
- c. But the celebration of this act of creation is not offered as *a simple honouring of 'pure' beauty* (. . .). (BNC)

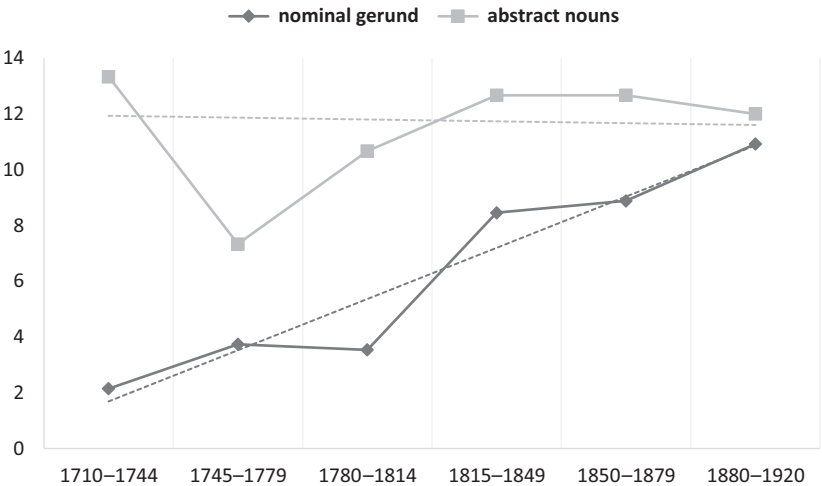
More specifically, the “cardinality” value of the indefinite article (Lyons 1999: 34) seems irreconcilable with the status of nominal gerunds as uncount and homogeneous nouns. Forms in *-ing* with indefinite article have therefore tended to be reduced to count deverbal nouns such as *a painting*, *a building* or *a meeting* (Brinton 1991, 1995; Wik 1973). Yet, not all indefinite *-ing* forms can be analyzed as fully lexicalized count nouns designating the result of the *-ing* process – even those which do not have a derivational alternative. This chapter will draw

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<sup>27</sup> The synchronic analyses of this chapter are largely based on Maekelberghe and Heyvaert (2016), while the diachronic analysis draws on Fonteyn and Maekelberghe (2018).

attention to those *-ing* forms with indefinite article that retain verb-like semantics, are not count nouns and yet take an indefinite article.

The emergence of indefinite nominal gerunds is also interesting from a diachronic point of view. Due to their infrequency, initial occurrences of indefinite nominal gerunds in Middle English have received little attention. They have been viewed as accidental coinages or as part of a larger trend in English whereby abstract nouns started combining with indefinite articles. Yet, as shown in Figure 12, the increase of indefinite articles with nominal gerunds is significantly higher than that of the indefinite article with a random selection



**Figure 12:** Relative frequency (%) of indefinite determiners occurring within the category of nominal gerunds vs. other abstract nouns between 1710 and 1920 in CLMET3.1.

**Note:** The trends in Figure 12 can be compared by measuring the correlation between the increase of indefinite determiners with gerunds or other noun phrases and the passage of time (Hilpert and Gries 2009), expressed by means of Kendall's tau. If Kendall's tau has a positive value (between 1 and 0), it indicates that there is a positive trend (i.e. the proportion of indefinite articles increases over time), while a negative tau (between 0 and –1) indicates a negative correlation (i.e. the proportion of indefinite articles decreases over time). If tau approaches 0, it indicates the absence of a (strong) trend, while values approaching either 1 or –1 indicate that there is a perfect correlation between the passage of time and the increase of indefinite articles. Comparing the trends, then, we find that the increase of indefinite articles with nominal gerunds has a tau-value of 0.86 ( $p = 0.01$ ) while the frequency change of indefinite articles with other abstract nouns has a tau-value of –0.067 (indicating a slight decrease over time, which is not significant:  $p = 1$ ) (see Fonteyn and Maekelberghe 2018 for a more detailed discussion).

of 150 abstract nouns. The indefinite nominal gerund's steady rise in frequency during the Late Modern English period can thus be regarded as a structural innovation within the gerund system itself.

The development of the indefinite nominal gerund cannot be studied in isolation: it has to be considered in relation to the existence of bare nominal gerunds with indefinite reference, as in (137), as well as in the context of other, count nominalization patterns, such as Latinate nominalizations (e.g. *a classification*) and zero-derivations (e.g. *a change*).

- (137) There was *great rocking of the table* at this time, and Mrs. James said: "If that is Captain Drinkwater, let us ask him the answer as well?" (1892, CLMET3.1)

This chapter consists of two parts. Section 6.1 presents a diachronic study, which will mainly zoom in on the paradigmatic relations between indefinite nominal gerunds on the one hand and bare nominal gerunds and alternative word formation patterns on the other. Combining referential, collocational and aspectual analyses, I will explore if and how the indefinite nominal gerund engaged in competition with these forms and how this may have affected its functional profile. It will be shown that the initial emergence of the indefinite nominal gerund in fact presents a functional innovation in the gerund system which can be explained in terms of system pressure, whereby nominal gerunds, similar to other uncount nouns (e.g. *Ø/the/an (excellent) knowledge*), can combine with indefinite articles under certain conditions.

In the remainder of the chapter, I will examine the exact nature of the conditions under which nominal gerunds can combine with an indefinite article from a synchronic point of view. Section 6.2 maps out the contexts in which an indefinite article is said to combine with regular, non-nominalized uncount nouns. After presenting the methodology in Section 6.3, I will check the claims made in the literature through a referential analysis of 300 indefinite nominal gerunds from BNC and COCA in Section 6.4. It will be argued that the use of the indefinite article with nominal gerunds is functionally motivated in that it establishes a *particularized* conceptualization of the situation referred to. I discuss how the notion of particularization is to be understood and examine if and how it can be contextually triggered or facilitated in Section 6.5. The results of the diachronic and synchronic study will then be synthesized in Section 6.6.

## 6.1 The rise of the indefinite nominal gerund: Innovation or substitution?

### 6.1.1 Background: The bare nominal gerund

As mentioned in the introduction, the rise of indefinite articles with nominal gerunds does not occur simultaneously with a more general upsurge of indefinite articles with abstract nouns. Still, it is not clear whether the institutionalization of the indefinite nominal gerund should be regarded as a structural innovation, or whether the new form with indefinite article merely enters the language to take over functions of another formal predecessor.

In order to answer that question, we need to take into account some crucial changes undergone by the gerund system during the Early and Late Modern English period, most notably the rise of the verbal gerund. In an extensive corpus-based analysis, De Smet (2008, 2013) teases out the functional motivations behind the well-studied rise of the verbalized gerund, stating that it can be explained as a diachronic process of substitution, as the verbal gerund gradually came to replace an older (and functionally less versatile) form. De Smet (2008; 2013: 136) starts his account of the rise of the verbal gerund by distinguishing three main types of gerund constructions, which serve as the locus of the major developments in Middle and Early Modern English: the definite nominal gerund, the bare nominal gerund, and the verbal gerund (as in [138a-c] respectively):<sup>28</sup>

- (138) a. *He defouleth the whole faith of his testimony, by the falsifying of one part* (a1555, Oxford English Dictionary [De Smet 2013: 136])
- b. *That we fall not into disordering of ourselves by anger.* (1559, Oxford English Dictionary [De Smet 2013: 136])
- c. *I shall teach him a lesson, for filching hens or cocks* (1552–1563, Helsinki Corpus [De Smet 2013: 136])

By highlighting the functional-semantic identity between bare nominal gerunds and verbal gerunds, De Smet is able to show that verbal gerunds automatically “calque the function and distribution of bare nominal gerunds” (De Smet 2013: 137; Fonteyn and Heyvaert 2018), and “bare nominal and verbal gerunds compete with one another over the same set of environments” (De Smet 2008: 95).

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<sup>28</sup> Note that De Smet (2008, 2013) does not include the indefinite nominal gerund as a separate category, as nominal gerunds preceded by an indefinite article are still extremely rare in Middle and Early Modern English.



In particular, it seems that bare nominal gerunds that establish their referent through “indirect clausal grounding” or subject control were entirely replaced by verbal gerunds by the end of the Late Modern English period (Fonteyn, Heyvaert and Maekelberghe 2015; Fonteyn 2016).

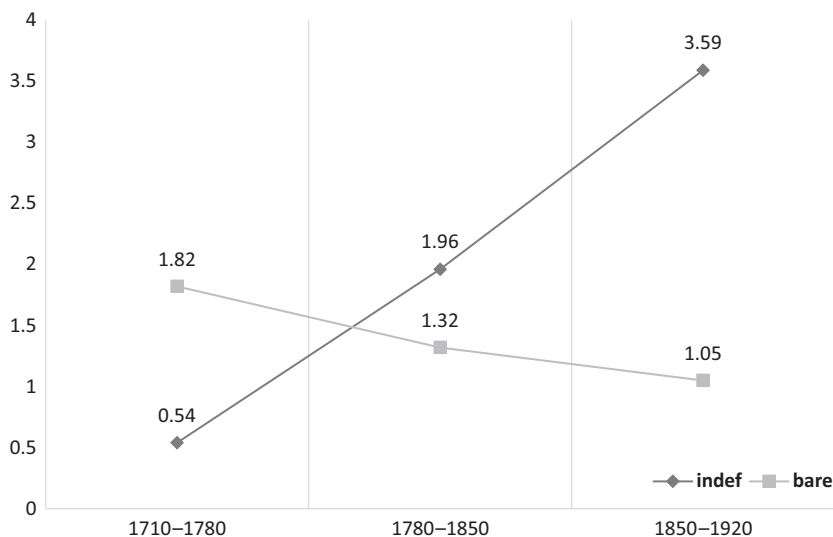
Due to the loss of clausally grounded bare nominal gerunds, the remaining uses of bare nominal gerunds in Late Modern English are either generic, as in example (139a), non-specific, as in example (139b), or specific indefinite, as in example (139c) (Fonteyn, Heyvaert and Maekelberghe 2015; Fonteyn 2016).

- (139) a. Before mental training must come *training of the body*. (1891, CLMET3.1)  
 b. Don’t! Can’t you be fond of a cove without *squeedging and throttling of him*? (1846–1848, CLMET3.1)  
 c. He will feel the want of these necessities when it is too late, when he is arrived at that place where there is wailing and *gnashing of teeth*. (1749, CLMET3.1)

The class of bare nominal gerunds at that stage seems to largely overlap with the class of nominal gerunds preceded by an indefinite article, which can also express generic (140a), non-specific (140b), or specific indefinite (140c) reference (Fonteyn 2016):

- (140) a. What true art requires of us is *a faithful rendering of a great experience*. (1899, CLMET3.1)  
 b. Lady Caroline (. . .) uttered the last sentence, with its vague, far-reaching, and most damaging hint, without even *a pricking of conscience*. (1884, CLMET3.1)  
 c. (. . .) a noise, like that of a tumult, seemed to proceed from the prison below; it died away soon after, and *a clanking of fetters* was heard along the passage that led to my apartment. (1828, CLMET3.1)

Not only do diachronic studies thus suggest that there is a potential functional overlap between bare and indefinite nominal gerunds, Fonteyn and Maekelberghe (2018) moreover show that bare nominal gerunds decrease in frequency in the same period during which indefinite nominal gerunds start their substantial rise (see Figure 13). It is tempting to assume, then, that the rise of nominal gerunds with an indefinite article is related to the further demise of bare nominal gerunds. This hypothesis will be tested in the following section by means of a comparison of the referential semantics of both nominal gerund types.



**Figure 13:** Frequency of indefinite and bare nominal gerunds in Late Modern English (normalized frequency over 100,000 words).

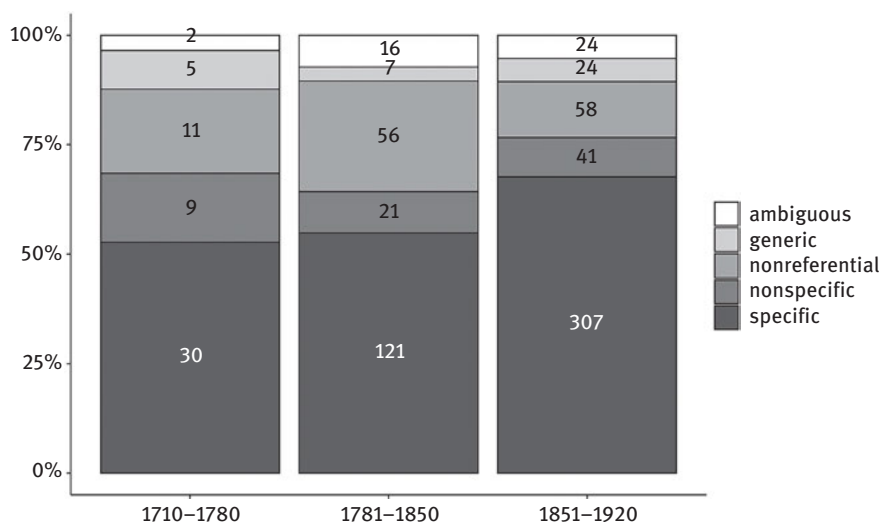
### 6.1.2 Referential comparison of bare and indefinite nominal gerunds

Fonteyn and Maekelberghe (2018) conducted a referential analysis of all 732 indefinite nominal gerunds and 466 bare nominal gerunds occurring between 1710–1920 in CLMET3.1. If the indefinite nominal gerund replaced the bare nominal gerund, one would expect it to take over (parts) of the bare nominal gerund's referential profile, eventually ousting the latter in certain referential domains. In addition to the subtypes of generic, non-specific and specific indefinite reference, which are illustrated in examples (139) and (140), we thereby also discerned non-referential instances such as (141a) and (141b):

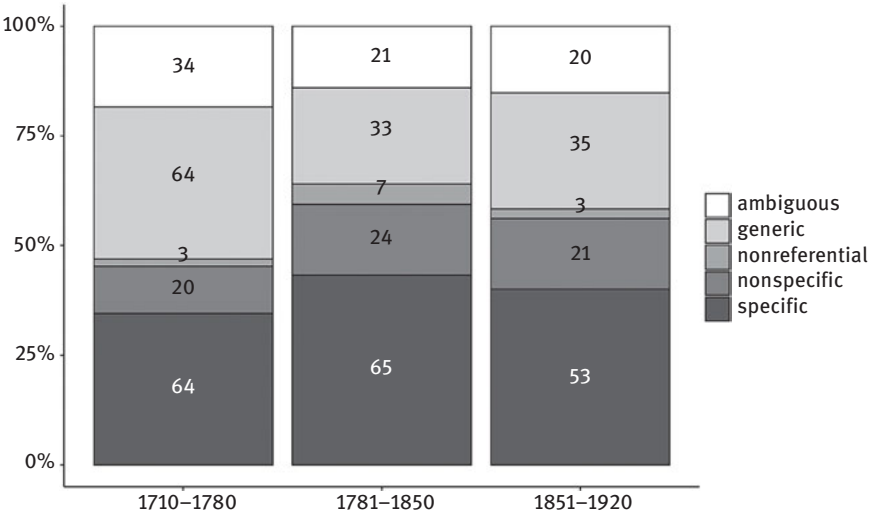
- (141) a. My intention was to have stay'd here at least one day, to have looked into the Country had we met with fresh water convenient, or any other Refreshment; but as we did not, I thought it would be only *spending of time*, and loosing as much of a light Moon to little purpose (. . .) (1770, CLMET3.1)
- b. These store casks were mounted on stands or horses (. . .) and then the butts and barrels were rolled to the door, without one ounce of lifting from the commencement of the process to the end. This was *a great saving of labour*. (1773–1835, CLMET3.1)

Before going into the results of the referential analysis, it is interesting to note that indefinite and bare nominal gerunds do not differ significantly in terms of the types of verbs they are derived from. This was revealed by means of a distinctive collexeme analysis (Gries and Stefanowitsch 2004), which assesses the attraction of a certain lexeme to one member of an alternating construction (the indefinite nominal gerund) as opposed to the other (the bare nominal gerund). While a negligible number of verbs appear to be significantly attracted to the bare nominal gerund construction, amongst which *making* and *giving*, there are no verbs that significantly prefer the indefinite nominal gerund construction over the bare nominal gerund construction. Thus, the indefinite nominal gerund did not attract new verbs into the gerundive system, but rather drew on the verbs that were already available in the nominal gerund paradigm. This, one could argue, might be an argument in favor of the substitution hypothesis.

The referential analysis, however, paints a different picture. As can be observed in Figures 14 and 15, neither bare nor indefinite nominal gerunds exhibit significant diachronic changes in their usage profile. Already early on, indefinite nominal gerunds show a clear preference for specific reference, while bare nominal gerunds maintain the same proportions of referents with generic, specific and non-specific reference throughout the Late Modern English period. Importantly, then, the increase of indefinite nominal gerunds does not appear to affect the bare nominal gerund's usage profile in the same way as the verbal



**Figure 14:** Referential profile of nominal gerunds with an indefinite article.



**Figure 15:** Referential profile of bare nominal gerunds.

gerund did. The rise of the indefinite nominal gerund thus appears to represent an innovation in the gerundive system rather than a substitution. This is clearly illustrated by the category of non-referential uses: up until the emergence of the indefinite nominal gerund, hardly any non-referential uses of nominal gerunds are attested. As can be seen in Figure 14, however, non-referential uses represent the second-largest referential category with indefinite nominal gerunds. Crucially, it is the functional import of the indefinite article that facilitates the occurrence of nominal gerunds in these non-referential slots (see Section 6.3).

As far as system-internal competition is concerned, then, the indefinite nominal gerund does not appear to directly engage with the existing forms within the paradigm. Rather, the formal paradigmatic expansion represented by the indefinite nominal gerund is accompanied by functional innovation, introducing new referential options in the nominal gerund’s usage profile.

### 6.1.3 Lexical and aspectual comparative analysis of indefinite nominal gerunds and other nominalizations

The indefinite nominal gerund does not appear to compete with the bare nominal gerund over the same functional environments, but its usage profile may have been influenced by other nominalization constructions. The emergence of

particular tokens of indefinite nominal gerunds may, for instance, have been blocked by existing derived alternatives (Aronoff 1976; Rainer 1988). Thus, one would not expect an indefinite nominal gerund like *a moving [of his hand]* to be systematically used, as there is already an established Latinate nominalization which has a similar meaning, viz. *a movement [of his hand]*. A second factor which plays a role in the functional organization of language is the principle of isomorphism, which postulates a one-to-one relation between form and meaning (Haiman 1980: 515; Bloomfield 1933: 145; Bolinger 1968: 127) and assumes that speakers tend to avoid synonymy in language (Rainer 1988). In cases where multiple nominalizations from the same verb stem co-exist, each form will typically have a – sometimes only slightly – different meaning. This can be illustrated by the fact that nominal gerunds are typically processual in meaning (*the prescribing of drugs*) while formally similar Latinate nominalizations then tend to denote the result of the action (*the prescription of his medicine*).

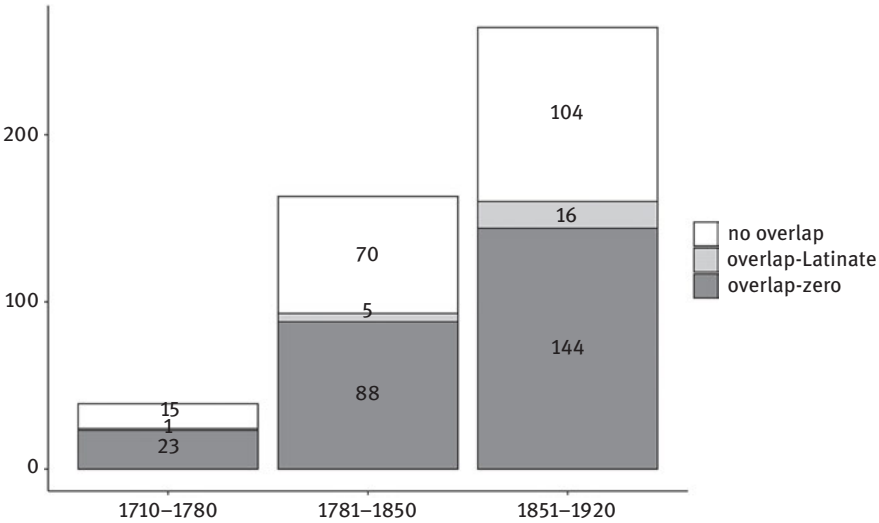
To investigate potential blocking effects, Fonteyn and Maekelberghe (2018) looked at the amount of lexical overlap between indefinite nominal gerunds and other nominalization constructions in Late Modern English. After dividing the data from the CLMET3.1 corpus into three periods, it was found that in the first period (1710–1780) the 57 nominal gerunds with an indefinite article occur with 39 different verb types. For the second period (1780–1850), there are 163 different verb types among the 221 tokens. In the final period, then, the 454 nominal gerunds with indefinite article instantiate 264 different verb types (see Table 17).

**Table 17:** Verb types occurring in indefinite nominal gerund construction per period.

Period	1710–1780	1780–1850	1850–1920
Verb types	39 types	163 types	264 types

After extracting the verb stems from the different verb types per period, the part-of-speech-tagged version of the CLMET 3.1 corpus was used to collect all instances where the verbal stem occurring in the *a(n) + [V-ing]<sub>N</sub>* construction (e.g. *classif* in *a classifying of things*, or *twitch* in *a twitching of the lips*) also occurred with one (or more) of the Latinate suffixes *-(at)ion*, *-ment*, *-al*, *-age*, *-ance* (e.g. *a classification of things*), or as zero *[V]<sub>N</sub>*-forms (e.g. *a twitch of the lips*). The results yielded by the search were manually checked for mistakes in the automated retrieval (e.g. adding irregular forms such as *applause* to the forms yielded for the stem *applaud*; removing irrelevant forms such as *pursuance* from the list of results for the verb stem *purse*) and part-of-speech-tagging (e.g. removing forms

with non-nominal function which were mistakenly tagged as nominal). If the verbal stem occurred with different nominalization constructions in the manually corrected list, they were considered as potentially competing variants and taken into account for further analysis. Figure 16 visualizes the amount of lexical overlap with Latinate nominalizations and zero derivations.



**Figure 16:** Functional overlap of indefinite nominal gerunds with neighbouring constructions (Latinate nominalizations and zero-derivations) expressed in absolute type frequency.

As can be observed, the overlap between indefinite nominal gerunds and derived nominals with Latinate suffixes is sparse, which suggests that there are indeed some blocking effects from established Latinate word formations. A number of examples where there is overlap between both nominalization types are illustrated in examples (142)–(143):

- (142) a. The development of intelligence is, under one of its chief aspects, *a classifying of the unlike things previously confounded together* – a formation of subclasses and sub-sub-classes, until the once confused aggregate of objects known, is resolved into an aggregate which unites great heterogeneity among its multiplied groups, with complete homogeneity among the members of each group. (1862, CLMET3.1)

- b. If human thought proceeded with the orderly method which abstract-logic would suggest to it, we might go further and say that *a classification of natural entities* should be the first step in science itself. (1920, CLMET3.1)
- (143) a. They chirp to each other, the scattered birds reunite; there is a fluttering and twittering, *a rearranging of mates*, then again songs, feeding, love, jealousy, and bickerings. (1874, CLMET3.1)
- b. The principal cause of this common phenomenon is what is known as “metamorphism” – that is, the subjection of the rock to a sufficient amount of heat to cause *a rearrangement of its particles*. (1877, CLMET3.1)

The overlap between nominal gerunds with an indefinite article and zero-derivations seems more substantial, despite the fact that it has been claimed on a few occasions that zero-nominalizations are semantically different from overtly affixed nominalizations (i.e. that they are not “overt analogues”; Sanders 1988). Plag (2003), for instance, argues that there are at least two remarkable systematic differences between the two forms (based on Cetnarowska 1993: 113): the zero-form of transitive verbs has a specialized meaning (while *-ing* forms of the same transitive verb have a more general meaning) and if a base verb can be used both transitively and intransitively, the *-ing* nominalization will be related to the transitive usage of the verb, while the conversion will be related to the intransitive usage (e.g. we say *the beating of the prisoners* but *the beat of my heart*; Plag 2003: 113). However, at least between 1710 and 1920, these claims do not hold. In example (146), for instance, intransitive *tap* has the same general meaning regardless of the adopted nominalization pattern, and in (144) and (145) both nominalized forms of *spread* and *change* result in transitive events (with the *of*-phrase of the zero-form expressing the verb’s direct object rather than its *subject*):

- (144) a. At the same time I avowed my conviction, that national education, and *a concurring spread of the gospel* were the indispensable condition (. . .) (1817, CLMET3.1)
- b. (. . .) he had now been instrumental in turning the attention of many, and to witness *a considerable spreading of the cause*. (1836, CLMET3.1)
- (145) a. The ill effects arising from intoxication, are *a changing of the natural tone of the stomach*. (1735–1820, CLMET3.1)
- b. (. . .) through *a change of habit or circumstance*, an organism is permanently subject to some new influence (. . .) (1867, CLMET3.1)

- (146) a. (. . .) and Mrs. O'Dowd, with *a tap of her whip*, told the Major to be quiet.  
(1847–1848, CLMET3.1)
- b. For the sound was more like *a light tapping of a little hammer* than an actual step. (1910, CLMET3.1)

The considerable amount of overlap in base verbs allowing both zero-derivation and indefinite nominal gerunds does not come as a surprise, as both word-formation processes readily combine with all different kinds of verb classes (Brinton 1998). On various occasions, however, it has been claimed that the alternation is in fact semantically motivated (Quirk et al. 1985: 1551; Mourelatos 1978; Brinton 1991, 1995, 1998). For Present-day English, it appears to be more or less generally accepted that (indefinite) nominal gerunds and zero-forms crucially differ with respect to the aspectual value attributed to the word formation process: as discussed in Chapter 5, the *-ing* suffix is typically argued to “[have] the effect of converting a situation into an activity, of making the situation durative, atelic, and dynamic” (Brinton 1998: 48), turning punctual verbs like *tap* into durative activities (e.g. *there was a continual tapping of these heavy drops upon the dead leaves* [1874, CLMET3.1]). As such, its meaning is seen as largely separate from that of zero-derivations, the latter being considered as “unit-excerpting” nominalizations, whereby “a *single instance* of this specified equivalent unit [i.e. *tap*] is taken” (Talmy 1988: 176–177, emphasis mine; also see Brinton 1998: 51). As was demonstrated by the aspectual analysis in Chapter 5, however, such claims tend to generalize over the actual usage of the nominalizations in question. In order to assess whether the lexical overlap between indefinite nominal gerunds and zero-derivations can be functionally motivated, the overlapping instances were subjected to further scrutiny by zooming in on their aspectual features. We thereby only focused on the *iterativeness* of the event. Iterativity is defined as the successive occurrence of identical subsituations on one particular occasion (in contrast to repetitiveness, which involves the occurrence of a situation on multiple occasions; see Chapter 5 Section 5.2.2). A distinction was made between single (147a-b), iterative (148a-b) and ambiguous situations, for which both a single and iterative reading is possible, as in (149a-b).<sup>29</sup>

<sup>29</sup> In addition to viewpoint aspect, the data were also coded for lexical aspect and argument type. A distinction was made between states (ai), activities (aai), accomplishments (aiii), achievements (aiv) and semelfactives (av).

(a) i. [–dynamic, +durative, –telic]: *I know it is only a **Desire** of Youth* (1766, CLMET3.1)  
ii. [+dynamic, +durative, –telic]: *I must refresh myself with a **reading** of Clarendon* (1828, CLMET3.1)



- (147) a. Then with *a catching of her breath*, she murmured: “Mr. Eager and Charlotte, dreadful frozen Charlotte”. (1908, CLMET3.1)  
 b. “All aboard!” is the signal for taking places, but on this occasion *a loud shout of “Tumble in for your lives!”* greeted my amused ears. (1856, CLMET3.1)
- (148) a. A lively scrimmage followed, amid *a general cracking of ribs* and snapping of spines. (1890, CLMET3.1)  
 b. (. . .) nothing remained of the pretty fall which had fed it but *a miserable trickle of drops from the cascade above*. (1905, CLMET3.1)
- (149) a. During the progress of this dialogue there was *a nervous twitching of Boldwood’s tightly closed lips*. (1874, CLMET3.1) [single twitch or multiple twitches]  
 b. There was *a distant glimmer of something that was not quite darkness, rather than of light*, in the sky. (1848, CLMET3.1) [a single glimmer or repeated glimmers of something]

As illustrated in Figure 17, zero-derivations express singular events in the vast majority of cases (93.6%) between 1710 and 1780, but the relative frequency of singular events expressed by zero-forms decreases to 78.9% between 1850–1920 ( $p < 0.0001$ ;  $\phi = 0.189$ ). In the group of indefinite nominal gerunds, we find a more even distribution of aspectual types. Indefinite nominal gerunds are often iterative or ambiguous between a singular and iterative reading, but (perhaps somewhat surprisingly) they express singular events in most cases (55.6% to 41.9%).

Contrary to what the isomorphism principle might predict, then, the indefinite nominal gerund does not establish its own specialized semantics from the start, but initially displays quite some functional overlap with existing zero-derivations. It is only during its subsequent spread and development that the indefinite nominal gerund appears to set itself apart from competing forms

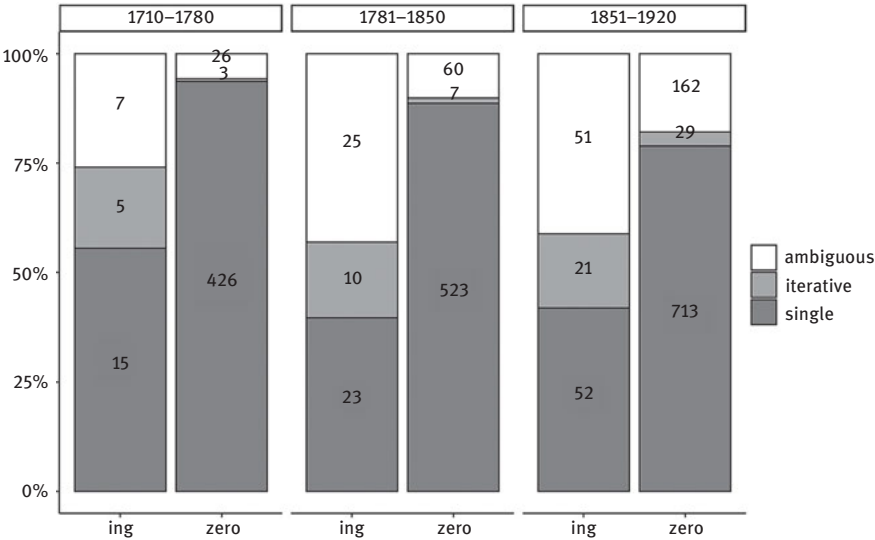
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iii. [+dynamic, +durative, +telic]: *It causes a **fall** of price that runs through society* (1917, CLMET3.1)

iv. [+dynamic, -durative, +transitional]: *with a **catching** of her breath, she murmured* (1908, CLMET3.1)

v. [+dynamic, -durative, -transitional]: *I heard a loud **clap** of thunder* (1797, CLMET3.1)

The arguments in the *of*-phrase were also coded as single (e.g. *a flashing of a distant light*), plural (*a beating of distant lights*) or mass forms (*a flashing of light*). In each period, neither lexical aspect nor argument type yielded any significant differences between indefinite nominal gerunds and zero-derivations.



**Figure 17:** Relative frequency (%) of single, iterative, and ambiguous readings for indefinite nominal gerunds and zero-derivations per period.

with its non-singular aspectual semantics. Thus, while the functional development of the indefinite nominal gerund can be motivated by a drive towards isomorphism, its very emergence requires an alternative explanation. As argued in Fonteyn and Maekelberghe (2018), the emergence of indefinite nominal gerunds can be accounted for by the structuralist notion of “system pressure”, which assumes that languages tend to form coherent systems whereby forms behave in an analogous way to similar forms (Blevins and Blevins 2009; Haspelmath 2014). In this case, the lack of systematic (or institutionalized) occurrence of indefinite articles with nominal gerunds constituted a gap in the nominal paradigm. Other uncount abstract nouns, for instance, can occur as bare noun phrases, as in (150a), or they can take a definite or indefinite article, as in (150b) and (150c) respectively:

- (150) a. *Knowledge* by theory only is such a vague, uncertain light. (1748, CLMET3.1)
- b. Possessed by a superstition which worships the symbols of knowledge instead of *the knowledge* itself, they do not see that only when his acquaintance with the objects and processes of the household (. . .) a child be introduced to the new sources of information which books supply. (1861, CLMET3.1)

- c. (. . .) not, it may be, *a rational knowledge*; but still *a knowledge* (. . .)  
(1861, CLMET3.1)

While nominal gerunds quite commonly occurred as bare noun phrases and definite noun phrases before 1710, the lack of an institutionalized form with indefinite article (as compared to other abstract nouns) is apparent between 1710 and 1780. After 1780, then, the presence of abstract nouns with indefinite articles – combined with an increased association of nominal gerunds with the nominal paradigm (cf. Fonteyn 2019) – potentially enables the language user to recognize analogical ties between them and, as a consequence, might have enabled the use of indefinite articles with nominal gerunds.

The diachronic analysis of indefinite nominal gerunds has thus allowed us to shed more light on the exact circumstances of their emergence and the interactions with neighbouring constructions. As regards the exact functional import of the indefinite article with nominal gerunds, however, much remains to be said. The following sections will thus be concerned with the Present-day English use of indefinite nominal gerunds. I will first discuss the semantic value of the indefinite article in general, after which I will compare its use with regular abstract nouns to that with nominal gerunds. More specifically, I am interested in the contexts which facilitate the occurrence of an indefinite article with regular abstract nouns as opposed to those which trigger indefinite articles with nominal gerunds.

## 6.2 Indefinite articles and uncount nouns: A synchronic account

The basic function of the indefinite article in the noun phrase, Lyons (1999: 36) argues, is that of “cardinality”. Or, as Quirk et al. (1985: 254fn) note, the indefinite article “can be regarded as an unstressed numeral, equivalent to stressed *one*”. Using the indefinite article involves “singling out a particular element” from a reference set (Radden and Dirven 2007: 91), and, by singling out one element, excluding others. Indefinite reference has therefore also been characterized as “exclusive” reference (Radden and Dirven 2007: 91). The cardinal value of the indefinite article ties in with its diachronic origins, *a(n)* being derived from the same ancestral form as the numeral *one* (Lyons 1999: 34; Quirk et al. 1985: 273). In many other languages the semantic equivalent of *a* is identical to the equivalent of *one*, cp. German *ein*, French *un* and Turkish *bir* (Lyons 1999: 34).

Being a cardinal marker, the indefinite article occurs in singular count noun phrases. It is needed as an explicit marker of cardinality there because, unlike

with plural noun phrases, the noun itself carries no number inflection (Lyons 1999: 36). Mass nouns, then, do not normally take indefinite articles because “cardinality is intrinsically less central, if indeed relevant at all, to mass expressions” (Lyons 1999: 36). Note that, while the indefinite article singles out just *one* referent, the zero-form (most commonly used with mass nouns) is “fully indeterminate between its endpoints ‘more than once’ and ‘all’” (Lyons 1999: 92).

That the indefinite article has also come to express indefiniteness and serves to introduce a referent in the discourse follows from its cardinal value, which may be comparable with but is not identical to that expressed by *one*: whereas *one* “contrasts semantically with *two*, *three*, and so on on the cardinal scale, *a* contrasts with the general value ‘more than one’” (Lyons 1999: 35). It is probably this “greater semantic schematicity of *a* which has made it possible for *a* to express extra functions such as reference to an ‘arbitrary’ or ‘representative’ instance” (Davidse 2004: 524). While definite noun phrases thus presuppose the existence of their referent and present it as identifiable to the hearer, indefinite NPs presuppose (knowledge of) the existence of a class of referents to which their referent belongs, but the hearer is not supposed to know the referent itself. By means of an indefinite NP the speaker merely invites the hearer to construe a referent conforming to the properties of the class of referents (cf. hence the label of “constructive reference”, Dik 1989: 139; also see Davidse 2004: 522).

While uncount nouns generally do not allow for the indefinite article *a(n)*, it is possible for them to combine under certain conditions. A first type of combination is found with uncount nouns that are mass nouns or nouns that designate substances like *sand*, *butter*, *milk*, *beer*. To refer to a unit/container/serving of the substance, they can combine with an indefinite article, as illustrated in (151) and (152) (see, among others, Allen 1966: 194; Gillon 1999: 57; Quirk et al. 1985: 1564; Declerck 1991: 338; Huddleston and Pullum 2002: 334–337; Joosten 2003: 169). Note that the mass noun in these constructions is basically converted into a (spatially delineated) count noun (Downing and Locke 2002: 425; Joosten 2003: 169), i.e. the substance “take[s] an individuated form: they have a bounded shape, which we typically associate with objects” (Radden and Dirven 2007: 71).

- (151) a. The house is built of *brick*.  
       b. He smashed the window with *a brick*.

- (152) a. Do you want *tea* or *coffee*?  
       b. Can I have *a coffee*, please [‘a cup of coffee’] (Quirk et al. 1985: 248)

Whereas the mass noun *brick* in (151a) designates a material, its counterpart in (151b) points to a concrete unit made of that material and thus functions as a count noun allowing for pluralization. Similarly, in (152a), *tea* and *coffee* refer to the substance, and hence take a zero article, whereas in (152b) *a coffee* designates a particular serving of coffee.

The following examples too involve the combination of an indefinite article and an uncount noun:

- (153) a. This is *a nice coffee*. (Quirk et al. 1985: 1564)  
       b. *a very rich milk* (Allen 1966: 195)  
       c. Martin a goûté *un vin délicieux*. (Kleiber 2003: 10)  
           ‘Martin has tasted a delicious wine’

These noun phrases, while they may refer to a particular serving of a substance (as is the case in [153a]), primarily foreground a subtype or variety of the type (of mass/material) expressed by the uncount noun. They typically involve adjectival modifiers that comment on particular qualities of the subtype that is referred to and thus impose qualitative “boundaries” on the referent of the uncount noun (Langacker 1991: 30): either subjective boundaries, as in (153a) and (153c), where the coffee and wine which the speaker is talking about are qualified as being ‘nice’ and ‘delicious’; or more objective ones as in (153b), which identifies a particular type of milk. The constructions in (153) have in common with those in (152) that they involve uncount nouns that designate a mass or substance. Unlike the uncount nouns in (152), however, they do not necessarily undergo a lexical shift from uncount to count. Compare, for instance, *milk* in (153b), which cannot pluralize, with *coffee* and *wine* in (153a) and (153c), which can in certain contexts pluralize (e.g. *Martin tasted several delicious wines*).

A final set of examples in which uncount nouns combine with an indefinite article are given in (154):

- (154) a. She played the oboe with *(a) charming sensitivity*. (Quirk et al. 1985: 287)  
       b. Jill has *a good knowledge of Greek*. (Huddleston and Pullum 2002: 339)

Combinations like these mostly contain abstract nouns, referring to qualities and abstractions; the uncount noun in them does not undergo a lexical shift from uncount to count and they are typically (restrictively) modified (Quirk et al. 1985: 287; Declerck 1991: 338). The use of the indefinite article in these noun phrases has been argued to be motivated by the fact that they designate a quality or characteristic state that is “limited (. . .) in some way” (Swan 2005: 132;

also see Allen 1966: 195), i.e. by being assigned to a particular person and/or linked to a specific occasion. As Quirk et al. (1985: 287) put it, “[the] conditions under which *a/an* occurs in such cases are unclear, but appear to include the following: (i) the noun refers to a quality or other abstraction which is attributed to a person; (ii) the noun is premodified and/or postmodified; and, generally speaking, the greater the amount of modification, the greater the acceptability of *a/an*” (Quirk et al. 1985: 287). In (154a), the *sensitivity* associated with the way in which *she* played the oboe at a particular occasion in the past is characterized as *charming* (but compare with *she plays the oboe with (a) charming sensitivity*, which has gnomic value and generalizes across instances rather than designating one particular event); in (154b), the knowledge of Greek that Jill in general has is further detailed as being *good*. Kleiber (2003: 11) discusses an interesting French example (based on Kupferman 2000) of a mass noun (*eau* ‘water’) that is construed with an indefinite article because it refers to a particular occurrence of the referent of the mass noun:

- (155) *Le lac avait ce jour-là une eau plutôt verdâtre.*  
 ‘The lake had that day a greenish water’

*Ce jour-là* (‘that day’) links the referent of *water* to a specific occasion and *verdâtre* (‘greenish’) further delimits this referent qualitatively.<sup>30</sup> Kleiber argues that it is the presence of modification that suggests “une lecture individualisante” or ‘an individualized reading’ of the referent of the uncount noun, which is “délimitée par les bornes de la situation spatio-temporelle dont elle est un élément” [‘delimited by the spatiotemporal situation it is part of’] (Kleiber 2003: 11). The use of the mass noun *water* in (155) distinguishes itself from that of *wine* in (153b) in that its *greenish* quality is inherently linked to the spatio-temporal context of the lake and that particular day, whereas the wine can be delicious regardless of the occasion or the person drinking it. Note that the modification that accompanies this use of the indefinite article with uncount nouns does not necessarily take the form of pre-modification, witness Downing and Locke’s (2002: 424) example:

- (156) You don’t meet *a courage like hers* every day. (Downing and Locke 2002: 424)

**30** Even though these types of combinations have mainly been discussed from the perspective of abstract nouns, and not mass nouns such as *water*, it should be noted that *water* does not undergo the same type of lexical shift as *water* in *He ordered two waters*, especially since pluralization does not become an option in *Le lac avait ce jour-là une eau plutôt verdâtre*. It neither expresses a type or variety of water, as in *a mineral water*.

The use of the indefinite article in this NP is, according to Downing and Locke, motivated by “the defining qualifier *like hers* referring to a specific person on a specific occasion” (2002: 424).

How does this relate to the use of nominal gerunds with indefinite article? The first type of combination of uncount nouns and indefinite article that were discussed above – i.e. that which turns an uncount noun into a count noun by switching the perspective to a bounded unit of the entity – corresponds to those *-ing* nouns which are fully lexicalized, such as *a painting*, *a building* and *a meeting*. Such forms, however, are not the focus of this study. In his (1996) discussion of nominal gerunds, Taylor briefly refers to the fact that in exceptional cases, (non-lexicalized) nominal gerunds can take an indefinite article, “especially if a particularized instance of the process is meant” (1996: 269). Taylor adds that “in such cases, the gerund will typically need to occur with some kind of restrictive modifier” (2002: 269). The example he gives to illustrate his claims is that in (157):

(157) It struck them as *an arrogant flaunting of American cultural imperialism*.

Taylor’s characterization of indefinite nominal gerunds is remindful of the accounts that we find in the literature on abstract nouns with indefinite article: the notion of “particularization” seems to come close to Kleiber’s “individualized reading” and “spatio-temporal delimitation”, as well as to Quirk et al.’s (1985: 287) analysis of indefinite abstract nouns as being “attributed to a particular person”. Taylor’s emphasis on the need for “some kind of restrictive modification” is equally in line with Quirk et al.’s and Kleiber’s claims.

In what follows, I will zoom in on the notion of particularization. I will confront the way it has thus far been defined in the context of indefinite uncount NPs (i.e. as spatiotemporal anchoring and being linked to a specific person or occasion) with corpus instances of indefinite nominal gerunds and redefine the notion to apply it to – intrinsically temporal – nominal gerunds. Section 6.3 first outlines how the data of Present-day English indefinite nominal gerunds were collected.

## 6.3 Methodology

The synchronic analysis is based on corpus data extracted from the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA), covering the time periods 1980–1993 and 1990–1994 respectively. By means of the search query *[\*ing.[n] of]*, the corpus was queried for all nouns

ending in *-ing* and followed by an *of*-phrase, after which the instances preceded by an indefinite article were selected manually. In total, I extracted 150 instances from BNC and 150 from COCA.

As pointed out earlier, this final set contains only structures with an indefinite article that have preserved their verb-like semantics and have not fully lexicalized into count nouns with resultative meaning. To arrive at this final set of 300 instances, a large number of indefinite noun phrases with an *-ing* head had to be removed. In fact, a small case study aimed at exploring the category of indefinite NPs with *-ing* head showed that in a random sample of 4013 deverbal nominalizations in *-ing* from BNC, 498 instances combine with an indefinite article, of which the majority is fully lexicalized (57%) and only a relatively small set of nominal gerunds combines verb-like semantics and uncount status (18%), witness the figures in Table 18 below.

**Table 18:** Indefinite nominalizations in *-ing*.

Category	Absolute frequency	Relative frequency within dataset	Normalized frequency over 100,000 words
Fully lexicalized	286	57%	3.5759
Ambiguous	123	25%	1.5379
Nominal gerund	89	18%	1.1128
Total	498	100%	6.2266

The distinction between uncount nominal gerunds with verb-like semantics and fully lexicalized nominalizations (which are typically – though not necessarily – count and focus on the result of the process underlying the deverbal noun) is not always as clear-cut. This is partly due to the fact that lexicalization represents a continuum between ad hoc derivations on the one hand and fully lexicalized and cognitively entrenched units on the other. “Ad hoc derivations” are structures that are “not sufficiently entrenched to be lexicalized and therefore have to be derived ‘on the spot’” (Heyvaert 2003: 120). Cognitive entrenchment plays a role in the perception of a structure as a fixed unit or a non-unit and is related to the structure’s frequency of occurrence: “every use of a structure has a positive impact on its degree of entrenchment, whereas extended periods of disuse have a negative impact” (Langacker 1987a: 59). As Langacker points out, there is no “nonarbitrary cutoff point in defining units” (1987a: 59),



and structures show varying degrees of (semantic) specificity and cognitive entrenchment. The distinction between a specific, fully lexicalized construction and an ad hoc derivation is illustrated by the following two examples of *-er* nominalizations taken from Heyvaert (2003: 45): *destroyer* in (158a) is an example of an ad hoc nominalization, whereas *destroyer* in (158b) represents a conventional unit with specialized semantics (referring to a specific type of war ship):

- (158) a. Alex Gough, the Welsh *destroyer* of Del Harris's hopes on Tuesday. . .  
 b. . . . a passenger steamer, which crossed the Channel escorted by a *destroyer*.

The examples in (158) show that one and the same form (*destroyer*) can take on a fundamentally different meaning depending on the context in which it is used. Similar observations hold for deverbal nouns in *-ing*:

- (159) a. There's a *saying* which isn't entirely true that the politics stops at the waters' edge. (BNC)  
 b. At the end of the session there was a very ostentatious *saying* of goodbye and promises from both groups to 'see you next week'. (BNC)

To decide whether an *-ing* noun belonged more to the lexicalized or entrenched end of the cline, or whether it was closer to an ad hoc derivation that had retained verb-like semantics, I applied two criteria. First I examined if the nominalization allowed for plural marking. Since ad hoc pluralization does not necessarily point towards lexicalization, only productive plural marking was considered, i.e. plural forms which occurred more than twice. This was checked by searching BNC and COCA for plural forms with the same semantics as the singular instance. Secondly, I checked if the nominalization showed signs of semantic specialization *in the context in which it occurred*. This meant that there had to be an indication that the nominalization denoted more than only "the activity of". In case of doubt, the Oxford English Dictionary was consulted. When an instance had both a specialized meaning and a productive plural, it was considered to be fully lexicalized. When it met neither criterion, it was classified as a full nominal gerund. Instances that showed similarities to both ends of the cline were classified as ambiguous and not retained for further analysis.

As shown in Table 18, a majority of indefinite *-ing* nominalizations in the sample were categorized as fully lexicalized. The high frequency of fully lexicalized count *-ing* nouns is mainly due to the frequency of nouns such as *meeting* and *drawing*, as in (160).

- (160) a. As a result of the collapse of talks in July 1989 at *a meeting of the International Coffee Organization* (ICO) (. . .) (BNC)  
 b. (. . .) *a brilliant brush drawing of a female nude from 1920* (. . .) (BNC)

The second largest category was that of instances which are ambiguous between a fully lexicalized and gerund-like interpretation, as illustrated in (161), where *flowering* and *sighting* are examples of nominalizations which have a more or less productive plural, but do not show clear signs of semantic specialization. Ambiguous structures like these were not preserved for the analysis.

- (161) a. In the Venetian cities and in the republic of Ragusa there was *a unique flowering of the arts*, blending the spirit of the Italian Renaissance with the native culture. (BNC)  
 b. (. . .) we do have another unconfirmed report of *a third sighting of this man* within the last week. (BNC)

The category of indefinite nominal gerunds that I retained for my analysis, finally, consists of those instances that show neither semantic specialization, nor productive plural marking. Instead, they denote an ‘activity of [V]’ meaning and have uncount nominal status.

- (162) a. Roddy Ross of Tecnomarine said the partnership between the two engineering firms represented *a strengthening of relations between them* and would work to mutual advantage.’ (BNC)  
 b. Marchers carried banners to Northumberland Street for *a symbolic crossing of the wall that divides them*. (BNC)

In the remainder of this chapter, I will zoom in on this last category of indefinites and discuss the effect of the indefinite article on the conceptualization of the activity denoted by the deverbal noun.

## 6.4 The import of the indefinite article in Present-day English nominal gerunds

As pointed out earlier, the particularizing effect ascribed to the indefinite article when used with uncount nouns has thus far basically been defined in terms of the noun being linked up with (i) a specific or particularized person or occasion, which is typically (ii) delimited by spatiotemporal boundaries

and (iii) restrictively modified (Quirk et al. 1985: 287; Downing and Locke 2002: 424; Kleiber 2003: 11; Swan: 2005: 132).

As regards the need for restrictive modification, the corpus data shows that although a respectable number of indefinite nominal gerunds are premodified by either adjectives (163a), nouns (163b) or postdeterminers (163c), these premodified instances only account for 39% of the total set of indefinite nominal gerunds. Moreover, I found that in a contrastive set of 300 bare nominal gerunds, 55% of the instances occurred with premodification, as in (163d), which seems to suggest that premodification is not necessarily a determining factor in article choice.

- (163) a. (. . .) all of which has led *to a remarkable changing of the odds*. (COCA)  
 b. This led *to a greenhouse warming of the planet* (. . .). (COCA)  
 c. (. . .) I suspect he has in mind *a certain slackening of protocol* in regard to your presence in Blue Jade Palace. (COCA)  
 d. The reaction must then be stopped by *further light spraying of caustic cleaner* (. . .). (BNC)

The focus in this chapter, however, will be on the other two conditions that have been associated with the notion of particularization in the context of indefinite uncount NPs, viz. specificity and spatiotemporal delimitation. In Section 6.4.1 I will look at indefinite nominal gerunds more closely from a referential perspective, i.e. by checking if (i) they are exclusively connected to *specific* events and (ii) whether they prefer *spatiotemporally* anchored or actual(ized) contexts. Section 6.4.2 will then offer an alternative perspective on the indefinite nominal gerund. It will explore the particularizing effect of the indefinite article from a broader conceptual perspective which moves beyond the standard referential categories of specific, non-specific and generic reference and will consider the ways in which a particularized conceptualization can be contextually imposed or facilitated.

#### 6.4.1 Referential analysis

In what follows, I take a traditional referential perspective on indefinite nominal gerunds, comparable to the one presented in Chapter 4. I distinguished between four distinct types of spaces or contexts in which the language user can situate a gerund: actual or base space, as in (164a), which represents the mutually known or actual spatiotemporal world of the interlocutors; generic space, as in (164b), which “represents a fragment of the speaker’s conception of how

the world is structured” (Langacker 1991: 106), virtual space, which involves “the setting up of a new space different from the base space and linked to it”, as in (164c-d) (Croft and Cruse 2004: 33) and, finally, a non-referential mental space in (164e), which comprises all non-referential instances occurring in the predicative complement slot of copular clauses.

- (164) a. This led to *a greenhouse warming of the planet*, which in turn released more carbon dioxide from the surface (. . .). (COCA) [actual]  
 b. Phonocentricism consists in *a privileging of speech over writing*. (BNC) [generic]  
 c. The problem here is that this can cause *a blurring of brand identity* and a confusing proliferation of brands. (COCA) [virtual]  
 d. (. . .) they tried to engineer *a firing of Attorney Jay Stephens* (. . .). (COCA) [virtual]  
 e. Let’s not allow this now to become *a complete closing of the issue*. (COCA) [non-referential]

Within actual and virtual space, a further distinction was made between specific and non-specific reference, as in (165a-d):

- (165) a. Around the room there was a murmur of expectation, and then *a lessening of sound*. (COCA) [actual: specific]  
 b. Whenever her husband’s patients, draped in necklaces and feathers and carrying elaborate handbags and canes, would sit beside her, perhaps coughing or sneezing, or shaking their doleful roils of flesh with *a jingling of coins*, (. . .). (COCA) [actual: non-specific]  
 c. The basic idea was to keep *a careful accounting of the power input and output*. (BNC) [virtual: specific]  
 d. If there is *a field-induced mixing of the various states*, a B term may be observed. (BNC) [virtual: non-specific]

If indefinite nominal gerunds behave like regular abstract nouns with indefinite article, we would expect them to display a strong preference for both specific reference and actual or spatiotemporally anchored contexts, as in (166a). The results of the referential analysis of indefinite nominal gerunds, however, show that while indefinite nominal gerunds indeed prefer specific reference ( $p=0.006$ ,  $\phi=0.11$ ), non-specific reference is not uncommon either, especially in virtual space, as in (166b). Importantly, moreover, indefinite nominal gerunds turn out not to display a significant preference for actual contexts, but occur more or less as frequently in actual as in virtual contexts.

- (166) a. But Picard cut him short with *a simple raising of his hand*. (COCA)  
 b. (. . .) his proposal would not lead to *a downgrading of justice*. (BNC)

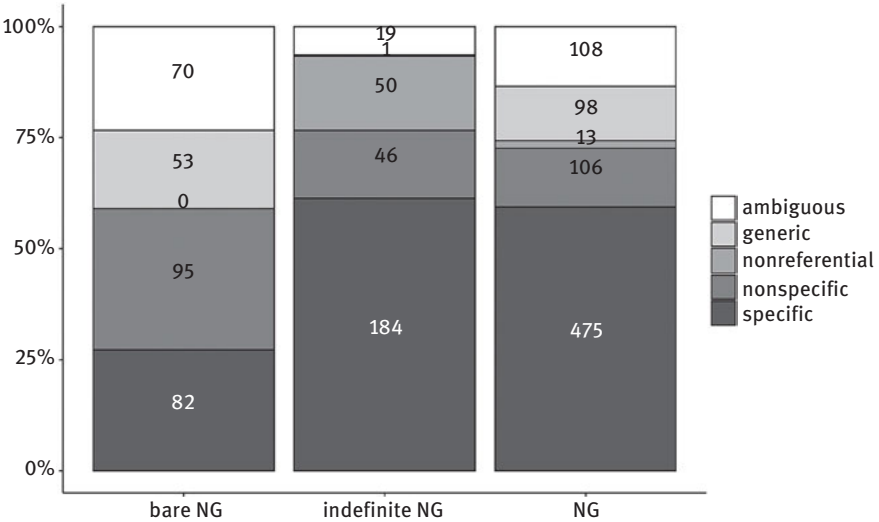
**Table 19:** Distribution of mental spaces and reference types.

Space level	NP level	Frequency
Actual	Specific	114
	Non-specific	9
	Ambiguous	1
Virtual	Specific	70
	Non-specific	37
Generic	Generic	19
Non-referential	Non-referential	50

At the same time, however, the referential profile of indefinite nominal gerunds is somewhat different from that of nominal gerunds in general, and especially from bare nominal gerunds, as can be observed in Figure 18.<sup>31</sup> While specific reference constitutes the largest group with both nominal gerunds and indefinite nominal gerunds, it is significantly smaller with bare nominal gerunds. The latter gerund type instead has a larger proportion of non-specific and generic entities. Non-referential instances, finally, are significantly more frequent with indefinite nominal gerunds than with both bare nominal gerunds and nominal gerunds in general (see Section 6.5.1 for a discussion of non-referential indefinite nominal gerunds).

A referential analysis that builds on traditional referential categories thus shows that being linked up to a specific person or occasion and being spatiotemporally delimited are conditions that cannot be applied to the complete set of indefinite nominal gerunds. Whereas indefinite nominal gerunds that have specific reference involve a link to a particular person, occasion or event, those that have non-specific or generic reference lack this kind of referential anchoring (von Heusinger 2002: 268). The condition of spatiotemporal delimitation, on the other hand, presupposes an actualized context that can set up spatiotemporal boundaries. A large number of indefinite nominal gerunds in the dataset, however, are referentially located within generic and, especially, virtual

<sup>31</sup> The referential analysis of bare nominal gerunds is based on a set of 300 bare nominal gerunds extracted from BNC and COCA. The numbers from the nominal gerund category are based on the referential analysis in Chapter 4 and comprise definite nominal gerunds, bare nominal gerunds and indefinite nominal gerunds.



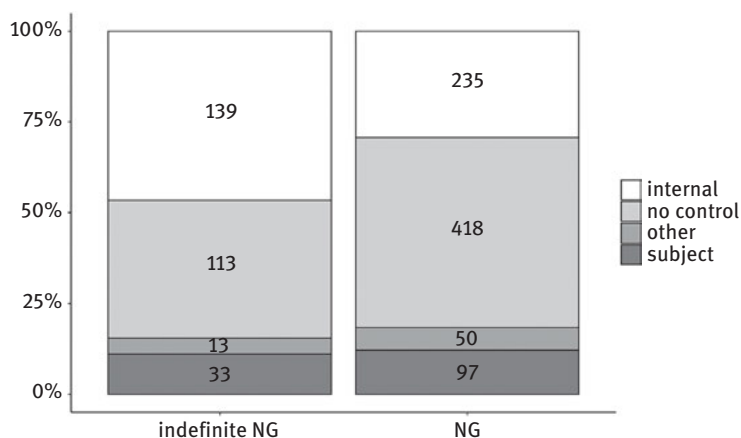
**Figure 18:** Comparison of referential subtypes with indefinite NGs, bare NGs and NGs in general.

space, witness the example in (167), which situates the process of *sharing of understanding* in a virtual, hypothetical world rather than in spatiotemporal space:

(167) Such reflection enables *a sharing of understandings*, a greater awareness of the school's goals and a renewed commitment to them (. . .). (BNC)

Another way of referentially anchoring a situation is by means of control mechanisms. Figure 19 illustrates the types of control relations found with indefinite nominal gerunds and compares them to the distribution of control mechanisms with nominal gerunds in general (as discussed in Chapter 4). It can be observed that indefinite nominal gerunds occur significantly more often with some type of control ( $p < 0.0001$ ,  $\phi = 0.13$ ). This, however, is not compensated by an increase in subject control or control by another element in the matrix clause; rather, the indefinite nominal gerund occurs significantly more often with an *internal* controller ( $p < 0.0001$ ,  $\phi = 0.16$ ). This can be explained by the fact that indefinite nominal gerunds frequently derive from ergative verbs such as *broadening*, *softening* and *closing*, where we find the subject of the verb in the *of*-phrase (also see Section 6.5.3).

It can be concluded that the impact of the use of the indefinite article with nominal gerunds cannot be reduced to establishing a specific, spatiotemporally located referent. If the notion of particularization cannot be understood in terms



**Figure 19:** Control with indefinite nominal gerunds vs. nominal gerunds in general.

of the traditional referential categories, however, then how exactly is the role of the indefinite article in indefinite nominal gerunds to be described? In the next section, I suggest that the high-level constructional schema that all indefinite nominal gerunds instantiate (cf. Langacker [1999]) is to be defined in terms of particularization, understood as a particular kind of abstract mental *conceptualization* of an event. I will then survey the different ways in which such conceptualization can be contextually supported.

### 6.4.2 Conceptual particularization

Consider the following examples of indefinite nominal gerunds:

- (168) a. President Clinton (. . .) invited the Palestinian and Israeli leaders to Washington for *a ceremonial signing of documents* (. . .). (COCA)  
 b. I felt that (. . .) *a quick moving of his cigar to his mouth* before his question, revealed a slight discomfiture. (COCA)  
 c. (. . .) that process entails *a closing of options*, a setting of limits to reality, (. . .). (BNC)  
 d. (. . .) we deal with the issues of relapse and the kinds of stresses that will come up to cause *a similar seeking of that relief*. (COCA)

Even though these four examples differ in terms of reference type (specific reference in [a-b], non-specific in [c-d]), context (actual space in [b], virtual space

in [a], [c] and [d]) and modificational patterns (premodification in [a], [b] and [d], no modification in [c]), they seem to have one thing in common, viz. the conceptualization of a situation as (temporally) delineated and individuated. In (168a-b), the gerund not only refers to a specific event, but to *one* specific event (*a signing, a quick moving*). Even in virtual contexts, where particularization is not enhanced by the actualized status of the NP referent, the indefinite article has the effect of conceptualizing the action as a delineated instance. In (168c), the speaker points to a series of particular, delineated actions that need to be undertaken in order to execute a certain process. Likewise, in example (168d), *a similar seeking* is conceptualized as *one* possible resulting action. This inherently temporal, or in Lyons' (1977: 445) terms, "second-order" nature is what distinguishes nominal gerunds most from uncount nouns like *sensitivity* and *knowledge* (as in *a charming sensitivity* and *a good knowledge*, see example [154]), which are not inherently "located in either space or time" (Lyons 1977: 445). While the latter designate states or characteristics, which can only be instantiated or particularized by being assigned to a specific person (in general or on a particular occasion), nominal gerunds typically reify dynamic activities with a certain duration (Brinton 1998: 34). The particularizing effect of the indefinite article with nominal gerunds can therefore be described as the creation of (temporal) boundaries through the interaction between the indefinite article's semantics of cardinality and the inherent dynamicity of the gerund.

Prototypical uses of the indefinite nominal gerund involve clear temporal boundaries, as in examples (168) above and (169) below, where the indefinite nominal gerund is used to refer to one concrete and temporally delineated action located either in actual or in virtual space. It is interesting to compare these uses with instances of bare nominal gerunds, such as *cleaning of the fresco* in (170): the action of *cleaning of the fresco* lacks clear temporal boundaries, resulting in vagueness regarding its starting and end point and the number of times the action has taken place.

- (169) a. No problem – the landfill dollars funded *a complete refurbishing of the fire station*. (COCA)  
 b. Opponents of gene-altering technology who feared *an unleashing of an Andromeda strain* have been reassured (. . .). (COCA)  
 c. *A viewing of the end result* is not strictly necessary if the main point of the exercise was to have students perform a task which required them to communicate with each other in English as they did it. (BNC)

(170) *Cleaning of the fresco* has revealed considerable use of gold (. . .). (BNC)



One possible extension of the prototypical type of particularization in indefinite nominal gerunds involves the conceptualization of situations containing multiple subevents, as in (171). Although the diachronic study undertaken in Section 6.1 has shown that iterativity is more common with indefinite nominal gerunds than with their zero-derivation counterparts, one might argue that the iterativeness of the event is less pronounced than it would be with bare or definite nominal gerunds, as in examples (172) and (173). In (171a), the person referred to is witnessing the *grinding* as one event, even though multiple events are going on at the same time. In (171b), *whirring* and *clicking* express multiple iterative subevents which are represented as one backgrounded event to the “gracious progressing of Enid Coley”. I suggest that here too, it is the cardinality of the indefinite article that neutralizes the multiplicity of the events and enforces a reading of *one* overarching event taking place.

- (171) a. There was motion in the wood, he heard the sound, it grew and seethed, and all in his sight dissolved in *a grinding of stone and wood and water and earth* (. . .). (COCA)
- b. To *a whirring of cine-cameras* and *a gratifying clicking of Nikons*, Enid Coley progressed graciously into the stands. (BNC)
- (172) Even from here, he can hear snippets of Gentry and Adrienne’s conversation between *the crashing of waves*. (COCA)
- (173) Tea should be allowed to brew for 4–5min – *frenzied stirring of leaves* and *bashing of bags* forces the flavour and emphasises the tannin. (BNC)

Interestingly, in some other less prototypical, yet not infrequent uses of the indefinite nominal gerund, reference seems to shift from a second-order, temporally delineated event to a conceptualization as an abstract notion, such as a trend, measure or issue, which is more typical of third-order entities. While the temporal orientation of the nominal gerund is not completely cancelled out, the main focus in these instances comes to lie on the representation of the event as a mental phenomenon (Lyons 1977: 445). It is typically the context which provides clues for this interpretation: in (174a), *a joining* is compared to the abstract concept of *federalism*, while the matrix verbs *detect* and *[a study] shows* in (174b–c) point in the direction of a trend rather than an event.

- (174) a. We can develop in Europe only within the guidelines set out by Central Government, a Government quite clear that *a joining of the attitudes and minds* is desirable, not federalism. (BNC)

- b. One may even detect *a waning of attention* to Roman peculiarities. (BNC)
- c. And a study of the Alaskan permafrost conducted by the U.S. Geological Survey shows *a thawing of several degrees* in the past 100 years but a drop in temperature of more than a degree for the period (. . .). (COCA)

In short, when an indefinite article combines with an uncount noun in *-ing*, the resulting NP conceptualizes the referent, i.e. the event which it designates, in a particular way: as a (more or less) delineated second-order entity which occurs or takes place in the real world or in some virtual world, and whose conceptualization is primarily temporal in nature (involving either a single instance of the process or iterative repetition of it on one occasion). Or, the focus may shift from the second-order status of the event to a purely third-order, i.e. purely mental perspective, which conceptualizes the event according to mental categories of classification (e.g. trends, issues, problems . . .).

Now that the particularizing import of the indefinite article has been pinned down, I will have a closer look at how the context can accommodate the conceptualization of an event as a particular second- or third-order entity. A qualitative analysis of the 300 indefinite nominal gerunds in the dataset suggests that certain syntactic structures function as strong facilitators coercing a particularizing reading, but that delineation can just as well have to do with the occurrence of certain lexical items in the matrix clause or broader context. Moreover, I argue that the verb underlying the gerund may have an impact on the particularization too. Note that delimitation to a particularized instance is often realized by a combination of elements, syntactic as well as lexical.

## 6.5 Contexts of particularization

### 6.5.1 Syntactic contexts of particularization

Certain syntactic configurations have functional slots that invite the presence of an indefinite article. While Taylor (1996: 269), for instance, claims that the indefinite article with nominal gerunds is especially motivated by restrictive modification, interestingly, the two examples he gives are also instances that occur in a non-referential predicative complement slot:

- (175) a. It struck them as *an arrogant flaunting of American cultural imperialism*.  
 b. It is not a to-and-fro process, but *an endless tantalizing leading on*, a flirtation without consummation.

The second example (which lacks an *of*-phrase) is moreover embedded in a coordination structure with another indefinite noun phrase (*a flirtation*). Interestingly, the syntactic configuration in (175b) even counteracts the effect of adjectival modification (*endless*) and the verb itself (*leading on*), which suggest a dynamic and unbounded situation rather than a temporally delimited one. I distinguish between four subcategories of syntactic “facilitators”: descriptive predicative copular clauses, specifying copular clauses, *there*-existentials and indefinite enumerations or coordinations. Of these four syntactic contexts, copular clauses appear to be the strongest facilitators, as over 18% of all indefinite nominal gerunds occur in either a predicative copular clause (13.6%) or a specifying copular clause (4.6%). In 10% of the cases, the indefinite nominal gerund is embedded in a *there*-existential, while 5.6% stand in coordination with another noun phrase with indefinite article. This means that almost 34% of all indefinite nominal gerunds occur in one of the following four syntactic contexts.

#### a. Descriptive predicative copular clauses

As was shown in the referential analysis, Present-day English indefinite nominal gerunds are frequent in non-referential contexts. Diachronic research has moreover shown that the non-referential use of NGs constitutes the most striking innovation that indefinite nominal gerunds bring into the system of NGs from Late Modern English onwards (Fonteyn and Maekelberghe 2018; also see Section 6.1). They function as descriptive predicative complements and, as such, do not establish a discourse referent which can be anaphorically referred to (Quirk et al. 1985: 273; Langacker 1991: 68). The descriptive predicative complement slot is typically associated with indefinite NPs, and especially with NPs with an indefinite article, because it “classifies a subject by saying that it is one of a category” (Depraetere and Langford 2012: 95), which ties in with the indefinite article’s core semantics of cardinality. Note that the singular subjects in (176a–b) (*that* and *it*) serve to pick out and individuate the process expressed by the nominal gerund, too.

- (176) a. That would represent *a bursting of the bubble*. (COCA)  
       b. This isn’t capitalism,’ he says. It’s only great bribery, and *a great stealing of my country* (. . .). (COCA)

#### b. Specifying copular clauses

In contrast to the examples above, the indefinite nominal gerunds occurring in specifying copular clauses are referential and mostly serve to specify a variable in the copular clause (Huddleston and Pullum 2002: 266). This can be done

exhaustively in the case of identifying copular clauses, as in (177a), or non-exhaustively with predicative copular clauses, as in (177b) (Huddleston and Pullum 2002: 271). In both cases, the indefinite nominal gerund specifies a value (*a sharpening, a continual melding*) for a variable (*another effect, what we found*). If the variable is conceptualized as being delineated, as is the case here, this will more easily result in delineation or individuation of the value, in this case the nominal gerund. Note that while in (177a) the delineation seems to be of a third-order nature, that in (177b) is definitely spatio-temporal.

- (177) a. *A sharpening of the sense of smell* was another effect of pregnancy, apparently. (COCA)  
 b. What we found in Hanoi was *a continual melding of old and new* that was like nothing I had seen in China. (COCA)

### c. There-existentials

The *there*-existential, and more specifically the “unmarked” or “cardinal” existential (Davidse 1999), is another syntactic construction that is associated with indefinite noun phrases. Uncount nouns occurring in cardinal existentials typically receive a non-generic or indefinite reading (Davidse 1999: 209), since the existential’s basic function is to *cardinally* quantify the instance referred to (Davidse 1999: 209, emphasis mine). Secondly, Davidse (1999: 240) notes that the instance referred to always occurs “within a specific search domain”, which can be precisely temporally located, as is done by *at the end of the session* in example (178a), but it may also be more vaguely delineated, as in (178b) (*as more ethnic groups got involved*). The main function of these contextual elements is to “delineate the spatio-temporal or other dimensions of the search domain” (Davidse 1999: 240). Not surprisingly, then, we find many instances of indefinite nominal gerunds with cardinal *there*-existentials.

- (178) a. At the end of the session there was *a very ostentatious saying of goodbye* and promises from both groups to ‘see you next week’. (BNC)  
 b. There’s been *a stretching of the curriculum* as more ethnic groups got involved. (COCA)

### d. Indefinite enumeration or coordination

A number of indefinite nominal gerunds are part of an enumeration or coordinated structure with other indefinite noun phrases, as illustrated in (179). In these cases, it is the presence of the indefinite article with the other noun phrases that sets up a mental framework of delineation and thus enables the occurrence of the indefinite article with the nominal gerund. Note that it is often a combination of factors

that induces a particularized conceptualization and hence invites the use of an indefinite article. In (179b), for example, the indefinite nominal gerund not only forms part of an enumeration, but the matrix verb *begin* expresses the starting point of the action, thus also implying a kind of temporal boundary.

- (179) a. Such reflection enables *a sharing of understandings*, a greater awareness of the school's goals and a renewed commitment to them. (BNC)  
 b. I usually begin a course, not with *a listing of requirements* (. . .), but with a question. (COCA)  
 c. (. . .) the events he symbolically depicts are part of a larger design to reveal a historia, *an unfolding of a pattern* (. . .). (BNC)

Compare this to the use of the bare nominal gerund in (180), which likewise forms part of an enumeration of other bare abstract noun phrases:

- (180) I think she had had it up to here with romance, disappointing romance, and was looking for stability, and for companionship, and for *sharing of mutual values*, and I think that's what she found with Maurice Tempelsman. (COCA)

### 6.5.2 Lexical indicators of particularization

On a lexical level, we can discern various contextual elements that evoke boundaries of some kind. I argue that these delimiting elements are not always modifiers, as typically argued in the literature on uncount nouns, witness examples (181a; *last*) and (182a-b; *certain*, *similar*), but also adverbials (181b-c; *three times*, *once more*), prepositions (181d; *upon*), verbs (181e; *climaxed with*), more complex elements (181f; *makes up the first few minutes*) and nouns (182c; *idea*). Since bounding with nominal gerunds prototypically takes place on a temporal level, temporally-oriented elements might have a stronger delimiting effect than other contextual elements. The postdeterminers *certain* (182a) and *similar* (182b) as well as the noun *idea* in (182c), set up boundaries of a third-order nature, similar to the examples in (174). In (183), the particularization of the nominal gerund is enhanced by its link to a specific individual (183a) and point in time (183b). While the occurrence of lexical elements coercing a particularized reading is more difficult to objectively quantify, as there is always a certain risk of over-interpreting the data, the following list of examples illustrates the diversity of lexical items that have the potential to temporally or conceptually bound the event or abstract concept referred to by the indefinite nominal gerund.

- (181) a. After *a last rubbing of his head* ( . . . ), Janice padlocks the coal room ( . . . ). (BNC)  
 b. ( . . . ) involves *an elaborate lowering of the man* three times onto the seat of learning ( . . . ). (COCA)  
 c. He smiled once more, *a mere stretching of his lips*. (COCA)  
 d. Moreover, the dismissal of a respected and tenured researcher could only be justified upon *a showing of failure of competence in many lines of his work*. (COCA)  
 e. Not surprisingly, the Manchester gig climaxed with *a traditional shaking of The Palace foundations* ( . . . ). (BNC)  
 f. A feeling of warm-up is definitely in the air; *a flexing of muscles that have not been stretched in public for some time* makes up the first few minutes of Faust's extraordinary set. . . and then all hell breaks loose! (BNC)
- (182) a. ( . . . ) he has in mind *a certain slackening of protocol* in regard to your presence in Blue Jade Palace. (COCA)  
 b. We deal with the issues ( . . . ) that will come up to cause *a similar seeking of that relief*. (COCA)  
 c. The idea of *an international linking of markets* has been popular among analysts. (COCA)
- (183) a. All right, did you have *a normal carrying of pregnancy*? (COCA)  
 b. ( . . . ) the company is positioning itself ahead of *a tightening of US food storage laws* which is due to take place in the next 18 months. (BNC)

As already mentioned at the beginning of this section, indefinite nominal gerunds do not necessarily occur more frequently with premodification than bare nominal gerunds. In order to assess whether there is a difference in the types of modification both gerund constructions typically combine with, I carried out a distinctive collexeme analysis of premodified indefinite and bare nominal gerunds from the 2010–2012 subcorpus of COCA. Two adjectives are found to be significantly attracted to the bare nominal gerund construction, viz. *regular* (value of collostructional strength=2.29) and *continuous* (value of collostructional strength=1.91).<sup>32</sup> Both adjectives clearly illustrate the temporal vagueness that is

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<sup>32</sup> The values of collostructional strength represent the  $-\log_{10}$  of a Fisher-Yates exact test. They can be interpreted as follows: If coll.strength  $>3 \rightarrow$  p-value  $<0.001$ ; if coll.strength  $>2 \rightarrow$  p-value  $<0.01$ ; if coll.strength  $>1.3 \rightarrow$  p-value  $<0.05$ .

more typical of bare nominal gerunds. Indefinite nominal gerunds, on the other hand, are significantly preferred by six adjectives, viz. *general*, *major*, *slight*, *sudden*, *deliberate*, *significant* and *radical* (respective values of collostructional strength = 3.64, 2.28, 2.01, 1.61, 1.53, 1.41). Both *sudden* and *slight* fit the temporal delineation evoked by the indefinite nominal gerund. The adjectives *general* and *major*, on the other hand, typically function as classifiers, which “serve to delimit the referent of a noun in relation to other referents” (Biber and Gray 2016: 185). As such, their semantics is likewise in line with the semantic value of the indefinite article. The adjectives *deliberate*, *significant* and *radical*, finally, are more common with the indefinite nominal gerunds denoting trends or measures of a third-order nature.

### 6.5.3 Verb types

Certain verbs occur more often as indefinite nominal gerunds than others. The nominal gerund *tightening of*, for example, has 98 occurrences in BNC, of which 40 instances are indefinite and 12 bare. Likewise, of the 65 instances of *blurring of*, 20 can be considered indefinite nominal gerunds, in contrast to 7 bare nominal gerunds. Compare this to *laying of*, for instance, which occurs 62 times in BNC, but only once with an indefinite article.

- (184) a. The problem here is that this can cause *a blurring of brand identity* and confusing proliferation of brands. (COCA)
- b. According to Elm’s sales director, Jim Cooper, the company is positioning itself ahead of *a tightening of US food storage laws* which is due to take place in the next 18 months. (BNC)
- c. They had done so after a period of co-operation and consultation with East Germany which looks in retrospect like *a laying of the groundwork for what was to come in both Germanys*. (BNC)

It is not always clear why certain types are more frequent with an indefinite article than other types. Some tendencies can be discerned, however. One category of *-ing* forms that are common with an indefinite article derives from deadjectival verbs, such as *flattening*, *thinning*, *lengthening*, *quickenning*, *lowering* etc. In total, 25% of all indefinite nominal gerunds in the dataset have a deadjectival verb as their stem. This is not entirely surprising, as in these cases, nominal gerunds face little to no competition from other word formation patterns. The indefinite nominal gerund is thus the default nominalization strategy for expressing (delineated) indefinite reference. Another frequent indefinite *-ing* group consists of

gerunds starting with the prefix *re-*, such as *restructuring*, *rethinking*, *reshaping* and *recasting*. These verbs make up 6.6% of all instances in the dataset.

- (185) a. The Maine Democrat called for *a comprehensive rethinking* of American policy. (COCA)  
b. The committee argued that conditions, standards and attitudes had changed so greatly since the early days of minerals planning that *a major recasting of the legislative framework* was needed. (BNC)

What these two groups appear to have in common is that they are typical accomplishments, or dynamic, telic events. The first group is characterized by an inchoative semantics, whereas the second group is marked by the telic suffix *re-* (Smith 1997: 179). With accomplishments, it is the verb itself that implies temporal boundaries, since, according to Smith (1997: 178), “an essential property of Accomplishments is that they involve specific, *countable* events”. This might be argued to facilitate the presence of the indefinite article and the conceptualization as a particularized instance (note that a similar suggestion was made by Mourelatos [1978]).

Indeed, when we have a closer look at the situation types expressed by the indefinite nominal gerund and compare it to the category of nominal gerunds in general (as presented in Chapter 5), we find significantly fewer activities and more accomplishments with the indefinite nominal gerund (see Figure 20 below).

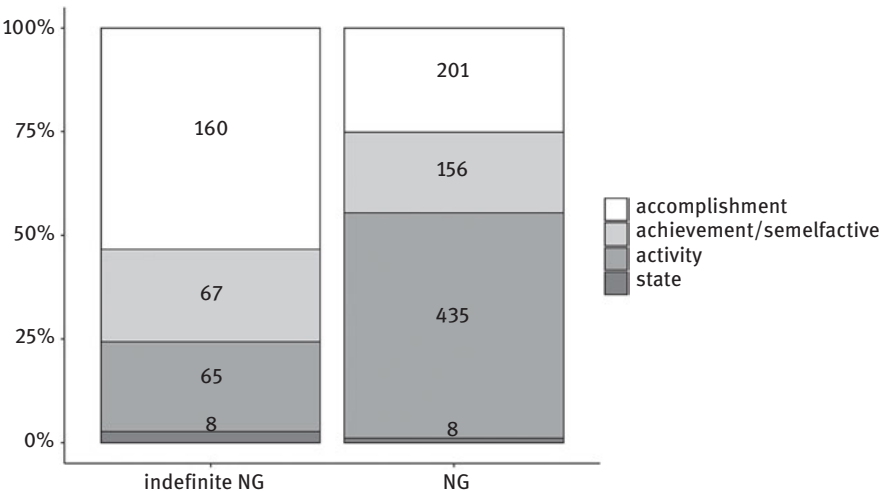


Figure 20: Situation types with indefinite nominal gerunds vs. nominal gerunds in general.



While indefinite nominal gerunds thus clearly tend to occur as telic events, it should be noted that activities are not uncommon either. Similar to nominal gerund activities, many of the indefinite nominal gerund activities conceptualize hypersituations, such as the iterative semelfactive and repetitive achievement in examples (186a) and (186b) respectively:

- (186) a. Whenever her husband's patients, draped in necklaces and feathers and carrying elaborate handbags and canes, would sit beside her, perhaps coughing or sneezing, or shaking their doleful roils of flesh with *a jingling of coins*. (COCA)  
 b. There is *a tremendous selling of plastic surgery* going on. (COCA)

Yet, there are also a number of clearly atelic indefinite nominal gerunds which do not involve a hypersituation, as illustrated in example (187):

- (187) And what we have in the whole tax debate is *a complete ignoring of the fact that the Social Security, Medicare, payroll tax keeps going up and that's the one that is so oppressive to the average person*. (COCA)

It seems that it is the syntactic context – a *wh*-cleft – and the presence of restrictive modification (*complete*) that overrules the apparent contradiction between the atelicity of the verb and the delineating effect of the indefinite article.

## 6.6 Conclusion

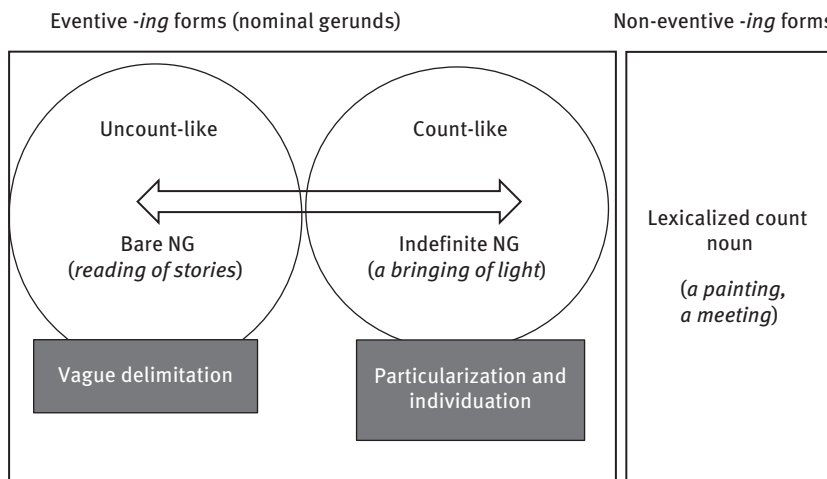
This chapter has focused on the indefinite nominal gerund, which was either neglected or reduced to a fully lexicalized (count) noun in earlier studies. A first goal of the chapter was to gain more insight in the circumstances surrounding the indefinite nominal gerund's rise in frequency during the Late Modern English period. By means of a referential analysis, it was shown that the indefinite nominal gerund did not serve as a mere replacement of the bare nominal gerund, which dropped in frequency during the Late Modern English period, but rather represents a structural and functional innovation within the nominal gerund system. A collocational analysis confirmed that indefinite nominal gerunds tend to combine with base verbs which do not have another derivational alternative, especially if there is already a Latinate word formation available. There was quite some lexical overlap with zero-derivations, however. Although this overlap could be functionally motivated during later stages of the indefinite nominal gerund's development, with the gerund being more frequent with repetitive or iterative

semantics than zero-derivations, this functional differentiation is not very pronounced during the initial stages of the indefinite nominal gerund's development. Since these early attestations of indefinite nominal gerunds did not always fill a functional gap in the broader network of deverbal nominalizations, it was argued that their emergence was motivated by system pressure, nominal gerunds gradually making use of all the formal options available in the nominal paradigm, including the use of indefinite articles.

The conditions under which indefinite nominal gerunds are used have then been examined from a synchronic point of view. Based on a survey of the existing literature on the topic, I identified three conditions which are found to play a role in the combination of abstract uncount nouns and indefinite articles: viz. when (i) linked up with a specific person or occasion, (ii) delimited by spatio-temporal boundaries and (iii) restrictively modified. A referential analysis of indefinite nominal gerunds showed, however, that these criteria certainly do not hold for all indefinite nominal gerunds. Instead, I argued that indefinite nominal gerunds realize a kind of particularization that involves a more schematic type of conceptualization. Rather than necessarily linking up an event to a specific person or spatio-temporally delimited occasion, the indefinite article in nominal gerunds serves to conceptualize an event as a delineated entity, typically a second-order entity taking place in the real or in some virtual world, but in some cases a third-order or purely mental phenomenon. Such delineation, I showed, is often suggested by the syntactic function that is assumed by the indefinite nominal gerund, and/or it is hinted at through the use of lexical items. It is moreover facilitated when the verb which the gerund derives from is telic and hence itself implies inherent boundaries.

Importantly, this chapter served as a test case for the various functional concepts that were developed and adopted in the previous chapters. A combination of referential and aspectual analysis has allowed us to further our understanding of the functioning of the indefinite nominal gerund. In the same vein, this case study of indefinite nominal gerunds has illustrated the importance of taking into account formal/collocational and contextual elements.

Finally, the analysis of indefinite nominal gerunds has made visible the existence of intra-categorical gradience within the nominal gerund category. More specifically, I argue that nominal gerunds can be placed on a cline from more prototypically uncount to count-like uses, with bare nominal gerunds and indefinite nominal gerunds occupying opposite ends of the cline, as illustrated in Figure 21. Indefinite nominal gerunds, then, are not irreconcilable with the uncount status of the nominal gerund, but rather represent less prototypical instances which conceptualize temporally or mentally delineated entities.



**Figure 21:** Intra-categorical gradience in the nominal gerund category.

The more schematic notions of vague delimitation and particularization are embodied in the functional behavior of bare and indefinite nominal gerunds. While bare nominal gerunds are more frequent with non-specific and especially generic reference, a majority of indefinite nominal gerunds realize specific reference. This is in line with Langacker's (2004: 104) claim that "zero grounding lends itself to fully general statements" since it "imposes no delimitation". We moreover find a large number of non-referential instances with indefinite nominal gerunds, a category which is rather uncommon with other (nominal) gerund types and which is linked to one particular syntactic context, viz. the predicative complement slot of a copular clause. As argued in Section 6.5.1, these slots typically require individuated entities. On a collocational level, we saw that bare nominal gerunds are likelier to combine with adjectives that emphasize their temporal continuity, such as *regular* and *continuous*, while nominal gerunds attract restrictive quantifying modifiers such as *complete* and *major*.

In conclusion, the multifunctional perspective adopted in the second part of this study has proven to be fruitful not only in comparing the functional behavior of nominal and verbal gerunds, but also, on the level of the nominal gerund subschema, in exploring the functional niche of one particular nominal gerund type.



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## **Part III: A variationist perspective**

The theoretical framework presented in Part II provided us with the necessary tools for an in-depth comparison of nominal and verbal gerunds. It was shown on which abstract cognitive-functional levels nominal and verbal gerunds most prominently differ, and how these functional differences can be linked up with the formal make-up of both constructions. In this part, I review the concepts introduced thus far from a different perspective, examining how they can help us understand the present-day organization of the gerund system, with a focus on variation and gradience. If we consider nominal and verbal gerunds as being part of a larger constructional network, it is important that we not only study semantic differences between them at the highest degree of schematicity, but also the connections they establish at lower levels of abstraction. While the functional description in Part II mainly pertained to the abstract macro-level of gerund constructions, Part III is concerned with meso- and micro-level variation between nominal and verbal gerunds. In Chapter 7, I investigate how variation between nominal and verbal gerunds is constrained on the token-level. It is shown that the functional characteristics of both gerund types as described at macro-level are also reflected in their lower-level distributional and lexical preferences. Chapter 8, then, presents two types of statistical analysis which will shed more light on the relative importance of the functional, syntactic and genre parameters that have been introduced in this study. By means of a Hierarchical Classes analysis, the gerund instances in my dataset are grouped together on the basis of the features they share, allowing us to discern clusters of instances which correspond to the nominal and verbal gerunds prototypes, as well as clusters which represent zones of overlap between both constructions. Finally, a logistic regression and random forest analysis assess how adequately the parameters can explain the observed variation in my dataset, and which of them are the strongest predictors for a particular gerund type.

## 7 Token-level gerund constructions

### 7.1 Introduction

Research into the meaning of nominal and verbal gerunds has long centered on the binary opposition between “action” vs. “fact” semantics, “second-order” vs. “third-order” entities and “state-of-affairs” vs. “propositions” (Lees 1960; Vendler 1968; Langacker 1991; Dik and Hengeveld 1991; Mackenzie 1996, 2004; Cristofaro 2003; Dixon 2006; Boye 2012). Nominal gerunds, as in (188), were considered to be typically action-referring, while the more clausal verbal gerunds were argued to invite both action-referring (189a) and propositional readings (189b). In the latter case, the verbal gerund refers to an abstract entity which is evaluated in terms of its truth value rather than its location in space and time (Lyons 1977: 443). This semantic opposition is often accompanied by distributional claims. In accordance with their action-referring status, nominal gerunds are associated with contexts that highlight different aspects of the occurrence of a situation (e.g. duration: *the closing of the gate took five minutes*), while verbal gerunds are commonly linked to epistemic contexts which comment on the truth value of the proposition (e.g. *him/his proposing to her is unlikely*) (Vendler 1968; Kiparsky and Kiparsky 1970; Mackenzie 2004; Dixon 2006).

(188) The third objective would be to aid in *the recruiting of new employees*.  
(COCA)

- (189) a. Designers should check locally to determine whether the Local Act is still operative in the area proposed for *building a high-bay warehouse*.  
(BNC)
- b. Conservatives have never forgiven the President for *breaking his “no new taxes” pledge to get his last economic package*. (COCA)

The semantic claims made in these studies differ significantly from more recent functional approaches, which take a discourse-functional stance towards the meaning of gerunds and focus on the different ways in which both constructions *conceptualize* events (De Smet 2007, 2008; Heyvaert 2003, 2008; Fonteyn 2019). Moreover, in contrast to the analyses presented in Part II, the action/fact opposition has not been investigated from a corpus-based and quantitative point of view. However, while the dichotomous or “action-fact” approach makes claims about distributional patterns without providing quantitative evidence, the referential and aspectual analyses discussed so far were quantitatively-oriented and

corpus-based but did not touch on the topic of distribution (with the exception of the case study of indefinite nominal gerunds).

The present chapter<sup>33</sup> wants to bridge the gap between these approaches by drawing on more collocationally-driven methods: building on Heyvaert's (2008) claim that a gerund's meaning – such as its action or fact semantics – largely depends on the context it is embedded in, this chapter wishes to explore how semantic description can benefit from a distributional and collocational perspective, linking abstract-conceptualist descriptions to concrete patterns of usage. In order to do so, I will apply a distinctive collexeme analysis (Gries and Stefanowitsch 2004) to a set of nominal and verbal gerunds extracted from COCA. Rather than exploring which lexemes are attracted to the gerund constructions themselves, I will use this analysis to trace the lexemes that distinctively co-occur with nominal and verbal gerunds in specific contextual slots. More specifically, I will zoom in on gerunds that function as direct objects or complements to verbs, as in (190), and complements to nouns, as in (191). By means of a distinctive collexeme analysis, then, I will assess to which predicates and head nouns nominal and verbal gerund constructions are typically attracted.

- (190) a. There is nothing that justifies, let alone compels, *the taking of such a great risk*. (COCA)  
       b. Mayor Jackson imposed the curfew for Thursday night only but said he would consider *extending the curfew day by day*. (COCA)
- (191) a. The story of *the forging of the British government's response to AIDS* remains to be written. (COCA)  
       b. So what can you do to better your chances of *getting the truth*? (COCA)

A semantic analysis of these lexemes should allow us to reassess the traditional labels that have figured in the literature on gerunds for a long time. It will also allow us to reconsider existing functional analyses from a distributional perspective, by checking whether we find concrete evidence for the gerund's abstract referential and aspectual profile in the types of contexts it selects. Taking into account the distributional potential of nominal and verbal gerunds, finally, can provide a more dynamic picture of their semantics, as it not only encompasses the meaning of the gerund construction itself, but also the interaction with its immediate surroundings.

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33 The research conducted in this chapter has also appeared as Maekelberghe (2019).



Although the primary interest of this chapter is in assessing the distributional preferences of nominal and verbal gerunds, I will also present a brief exploration of the types of verbs attracted to the gerund constructions themselves. Like distribution, this is an aspect of the gerund's formal and functional profile which has thus far remained largely unexplored territory. Yet, as noted in Chapter 2, there are indications that nominal and verbal gerunds tend to be biased in terms of the verbs they derive from. This hypothesis will be tested by means of a distinctive collexeme analysis which considers the verbs underlying the gerund. I will investigate whether the distinctive lexemes identified for each construction support the functional-semantic descriptions of nominal and verbal gerunds that have been offered so far, and which factors potentially constrain the selection of verbs.

The rest of the chapter is structured as follows: An overview of traditional studies on the semantics of gerunds is provided in Section 7.2. Section 7.3 will discuss the collocational methodology used in this chapter. Sections 7.4 and 7.5 will zoom in on the two contextual slots under investigation, viz. the direct object and noun complement function. Each section will first provide a short summary of current research on these two particular slots, after which I will present the results of the collocational analysis. Section 7.6 will discuss how these collocational analyses can lead to a more fine-grained and nuanced view on the semantics of gerunds. In Section 7.7, then, I will investigate which types of verbs are attracted to nominal vs. verbal gerund constructions, and why. Finally, all observations will be synthesized in Section 7.8.

## 7.2 A dichotomous view on the semantics of gerunds: State of the art

In his transformational account of English nominalizations, Lees (1960) offers a first semantic classification of Present-day English gerunds. Nominal gerunds, as in (192), which he labels “action nominalizations”, are argued to be solely action-referring. Verbal gerunds or “gerundive nominals”, on the other hand, can either be action-referring, in which case they are necessarily subjectless, as in (193), or they can refer to facts, as in (194).

(192) *The closing of the gate* takes five minutes.

(193) *Eating vegetables* is healthful. (Lees 1960: 58)

(194) *His having eaten vegetables* was a great surprise. (Lees 1960: 58)

While no thorough motivation is given as to why precisely nominal gerunds are action-referring and verbal gerunds can also have propositional value, this privative opposition between both gerund types has found its way into most synchronic accounts of the English gerund. As such, nominal gerunds are typically referred to as “action nominalizations” (see, amongst others, Chomsky 1970; Fraser 1970; Newmeyer 1970; Comrie 1976; Schachter 1976), while verbal gerunds tend to be associated with factive verbs in the context of complementation (e.g., Kiparsky and Kiparsky 1970; Thompson 1973; Noonan 1985; Dixon 2005: 323). A similar contrast can be found within more functional frameworks, albeit under a different terminology. Based on Lyons’ (1977) typology of entities, Mackenzie (1996, 2004: 974) considers nominal gerunds to represent so-called “second-order entities”, viz. entities which typically refer to events, processes and state-of-affairs and which are evaluated in terms of their reality status (Lyons 1977: 443). Verbal gerunds, on the other hand, are argued to conceptualize “third-order entities”, abstract entities referring to propositions which are “located outside time and space” (Lyons 1977: 443). A similar contrast is found in Dik and Hengeveld (1991), Cristofaro (2003) and Boye (2012), who use the terms “state-of-affairs” and “propositions”.

Whereas the notion of ‘fact’ as it is used in Vendler (1968) and Lees (1960) seems to suggest that verbal gerunds with a fact semantics are necessarily “presupposed true”, the terms ‘proposition’ and ‘third-order’ entity only entail that the situation described by the verbal gerund has truth value (Boye 2012: 192) without necessarily being presupposed, as in example (195b). In line with this description, verbal gerunds are argued to allow for epistemic modification, as can be witnessed in example (195b), where the adverb *unlikely* “represents the degree of epistemic support for some piece of information about the world” (Boye 2012: 197). The state-of-affairs referred to by the nominal gerund in (195a), on the other hand, is considered to be a mere representation of “something which is in the external world”, and, therefore, “not something for which we can have epistemic justification” (Boye 2012: 196). In the remainder of this chapter, I will use the term *fact* in the sense of third-order entity and proposition.<sup>34</sup>

(195) a. ?*Her singing of the aria next week* is unlikely.

b. *Her singing the aria next week* is unlikely. (Boye 2012: 208)

The contrast between the second-order (state-of-affairs) and third-order (propositional) nature of nominal and verbal gerunds respectively is often illustrated

<sup>34</sup> The fact that Vendler mentions a non-factive predicate like *anticipate* as a typical container for verbal gerunds indicates that he too interprets the notion of fact in this broader sense.

in comparative contexts such as the ones in (196). While the nominal gerund in (196a) evokes a manner-reading of the situation referred to in the direct object slot ('He criticized *the way in which* John threw the dice'), the verbal gerund in (196b) is said to simply refer to the fact that the situation occurred ('He criticized *the fact that* John threw the dice') (also see Lees 1960: 65; Mackenzie 1996, 2004; Vendler 1968; Langacker 1991; Kiparsky and Kiparsky 1970; Dixon 2005: 324; Dixon 2006: 16).

(196) a. He criticized *John's throwing of the dice*.

b. He criticized *John's throwing the dice*. (Dixon 2005: 323)

(197) What did you think of *his driving*? (Mackenzie 2004: 981)

The sentence in example (197), then, is argued to be not only semantically ambiguous between a state-of-affairs-reading ('What did you think of the way in which he was driving?') and a propositional reading ('What did you think of the fact that he was driving?'), but also ambiguous between two syntactic structures: a nominal gerund and a verbal gerund (Mackenzie 2004: 981; Vendler 1968: 50–51; Dixon 2006: 16).

Interestingly, the different interpretations attributed to nominal and verbal gerunds are also claimed to be manifested in their distributional preferences. Mackenzie (2004: 981), for instance, notes that nominal gerunds "are appropriate in contexts where a sequence of events is being described", while verbal gerunds "prefer epistemic contexts". Likewise, Vendler (1968: 78) mentions that typical "containers" for nominal gerunds (or "e-forms" in his terms) include action-referring lexemes such as *take place*, *follow*, *observe*, in contrast to the more factive or epistemic lexemes associated with verbal gerunds (or "d-forms"), such as *mention*, *deny* and *anticipate*.

Already early on, the semantic labels of action and fact have been challenged. It has been noted, for instance, that nominal gerunds can also combine with factive verbs, as in (198), and that verbal gerunds with expressed subject can also be action-referring, as in (199) (Langacker 1991; Declerck 1991; Heyvaert 2008). Moreover, as pointed out in Heyvaert (2008: 43), the labels of action and fact should not be considered "of equal value", since "nominals can designate or encode actions (. . .) [but] cannot be said to encode facts". Instead, she argues, it is the context that determines whether or not a nominal or clause receives a factive meaning.

(198) The genre Harper enjoys most is espionage thrillers, so he bemoans *the lifting of the Iron Curtain*. (COCA)

(199) My husband speaks very well, but his job involves *my answering the phone on his behalf quite a bit of the time*. (Heyvaert 2008: 43)

In order to provide a more satisfactory, all-encompassing semantic account of nominal and verbal gerunds, later studies have offered semantic descriptions of a more schematic nature and have mainly been concerned with the referential status of nominal and verbal gerunds (De Smet 2007, 2008; Heyvaert 2003, 2008; Fonteyn 2016; Fonteyn and Heyvaert 2018). As discussed in Chapter 4, the referential profiles of nominal and verbal gerunds center on the more abstract notions of conceptual (in)dependence and existential presupposition vs. flexibility. Nominal gerunds have thus been shown to be typically conceptually independent of the clausal context when establishing reference, as they mostly rely on nominal grounding elements. Verbal gerunds, on the other hand, make use of clausal strategies, viz. control relations, to establish (specific) reference. On an existential level, it has furthermore been argued that nominal gerunds tend to conceptualize actual(ized) entities, while verbal gerunds are more flexible with regard to the existential status of their referents, often conceptualizing virtual entities as well. Chapter 5 zoomed in on the aspectual status of nominal and verbal gerunds and considered their semantics in terms of the different temporal perspectives they impose on a situation. Rather than positing a sharp semantic contrast between both gerund types, the aspectual analysis instead revealed more subtle differences between them, which are again situated on a more abstract level. Nominal gerunds, it was argued, more often represent typified situations involving multiple subevents that extend over a longer period of time, while verbal gerunds are more frequent with single events. The situations underlying nominal gerund constructions are furthermore more often temporally delineated or bounded than verbal gerund situations.

Studies into the semantics of nominal and verbal gerunds have thus moved from a binary semantic opposition between action/state-of-affairs and fact/proposition to a more conceptual approach, which focuses on the representation of gerunds as nominal or clausal discourse referents and as processes unfolding over time. While earlier studies examined the different meanings of nominal and verbal gerunds in comparative, but “made-up” contexts, such as the ones in examples (195)–(196), the multifunctional perspective of Part II made use of corpus-based methods, exploring general tendencies in the actual usage of gerunds. In doing so, the conceptualist approach has allowed us to discern more subtle functional differences between nominal and verbal gerunds, showing how their formal hybridity is also manifested in their functional behavior. Moreover, unlike early semantic approaches, which neglected to provide a sound motivation for their claims, current analyses were shown to be able to link the diverging

functional profiles of nominal and verbal gerunds to their formally more noun-like or verb-like status.

As of yet, however, the distributional preferences of nominal and verbal gerunds still remain largely unexplored. I therefore aim to reconcile some of the merits of early semantic approaches, especially their attention to contextual features, with the multifunctional analysis presented in Chapters 4 to 6. This chapter has three specific aims:

- (i) reassess the traditional semantic labels of “action” and “fact” by taking on a quantitative and collocational perspective;
- (ii) explore whether the collocational ties of nominal and verbal gerunds can be linked to their respective referential and aspectual profiles, and specifically their grounding mechanisms, existential status and temporal viewpoint;
- (iii) finally, arrive at a more fine-grained and dynamic picture of the semantics of gerunds, which accounts for the fact that various features of its semantic profile can be highlighted or downplayed by contextual slots and collocates.

First, however, Section 7.3 reports on the datasets that were used for this chapter and the collocational analysis that was applied to them.

## 7.3 Methodology

To arrive at a better understanding of how specific contextual slots interact with a construction’s meaning, this chapter will focus on two functional slots, viz. gerunds functioning as direct objects and as complements to nouns, as illustrated in examples (200)–(201).

- (200) a. The Marines have organized this ceremony to celebrate *the signing of a contract for the rebuilding* of this school. (COCA)
- b. The snow is now from 4 to 6 feet deep, which so obstructs the roads as to prevent *our receiving a supply of provisions*. (COCA)
- (201) a. This, in effect, models a method of *reframing of stress reactions* and offers hope for an alternative and more adaptive response. (COCA)
- b. Moore managed the tricky balancing act of *creating works that were conceptually daring and progressive yet still understandable and accessible to viewers who know little about art history and are often put off by abstraction*. (COCA)

Several motivations lie behind the choice for these two particular slots. The first one is a practical one, as predicates and nouns typically provide content-rich information. Direct objects were chosen over subjects because verbal gerunds functioning as subjects are rather infrequent; and if they occur, they frequently have the semantically empty copular verb *be* as their main predicate, which does not provide us with the semantic clues that are needed for this particular study. The semantic and syntactic relationship between verbs and their direct objects as internal arguments is furthermore considered to be tighter and more influential than the one between the predicate and its subject, an external argument. Focusing on direct objects also allows us to reassess earlier studies in a more direct way, as these often illustrated their claims by means of gerunds functioning as direct objects (e.g. *he criticized John's throwing [of] the dice*, cf. *supra*). Head nouns and their complements, on the other hand, have received little attention so far. It will be argued in Section 7.5 that they can provide additional information about the gerund's semantic profile.

For the collocational analysis, a distinctive collexeme analysis was carried out (see Gries and Stefanowitsch 2004 for a detailed account). The distinctive collexeme analysis belongs to the family of collocation analyses, and is mainly used to assess the attraction of lexemes to members of an alternating pair, in this case the nominal and verbal gerund. While collocation analyses mostly focus on which lexemes are attracted to the constructions *themselves* (by analyzing, for instance, which verbs are attracted to the ditransitive vs. the prepositional dative), I will use the distinctive collexeme analysis to assess which matrix clause predicates and head nouns are most strongly attracted to one member of the alternating pair (the nominal gerund) as opposed to the other (the verbal gerund). The distinctive collexeme analysis was carried out on data extracted from the 2010–2012 subperiod of COCA, which roughly comprises 50 million words. Since the analysis does not allow for sampling, all nominal and verbal gerunds were extracted from this subsection.<sup>35</sup> To collect the nominal gerunds, the corpus was searched for all nouns ending in *-ing* which were followed by an *of*-phrase. Afterwards, all direct objects and nominal complements were manually selected. Importantly, the distinctive collexeme analysis requires both constructions under investigation to alternate, e.g. the clause *break the rules* allows for both a nominal and verbal gerund construction ([*the*] *breaking* [*of*] *the rules*), while a clause like *ask if it is true* can be

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<sup>35</sup> A search query limited to a two-year time period was not possible in the online BYU-interface of the BNC corpus, which is why COCA was chosen over BNC for this particular study.

turned into a verbal gerund (*asking if it is true*), but not into a nominal gerund (*\*the asking of if it is true*).

While most instances of nominal gerunds have verbal gerund alternatives, the opposite is not always the case. To restrict the dataset to alternating gerund constructions, some verbal gerunds thus had to be excluded from the collexeme analysis. More specifically, the search query for verbal gerunds was limited to verbal *-ing* forms – tagged as \*vvg in the corpus – followed by articles, determiners, pronouns, possessives and adjectives. I thereby excluded those verbal gerunds which do not typically have a nominal gerund alternative, such as verbal gerunds followed by complementizers (*saying that it is true*), prepositions (*swimming in the lake*) and nouns (*taking care of something*; or participial forms as *printing devices*). Even though this restricted query also excluded some alternating instances and thus partly overgeneralized, it is argued that the effect on the resulting dataset is only minor and does not influence the collocational analysis. In the case of verbal gerunds, direct objects and nominal complements were pre-selected through the search query. Concretely, I looked for sequences of (i) lexical verbs followed by verbal *-ing* forms and (ii) nouns followed by prepositions and verbal *-ing* forms, both with an optional intervening proper name, pronoun or possessive to pick up on verbal gerunds with a genitive or oblique subject (e.g. *the idea of me doing the laundry*). Verbal gerunds not functioning as direct objects or nominal complements, as in (202), were manually excluded from the results.

- (202) Sarah indicated that teachers could help students by *remembering the role*.  
[noun + preposition + verbal *-ing* form, but not a nominal complement]

Finally, some matrix predicates were excluded from the analysis. A first group consists of aspectual verbs (e.g. *he began receiving information*), the complements of which are often ambiguous between a gerundive and a participial reading (De Smet 2010). A second group includes combinations with sensory verbs such as *hear*, *feel* and *see*. While frequent with nominal gerunds, their verbal gerund alternatives involve structures like *he saw the boat sinking*, which are ambiguous with nouns followed by a reduced participial relative clause. The number of instances yielded from the search queries discussed above are summarized in Table 20.

These datasets were then also used as input for the distinctive collexeme analysis which looked at the types of verbs attracted to nominal vs. verbal gerunds. This time, the lexemes occurring within the gerund constructions themselves – 1204 for the nominal gerund category and 11,668 for the verbal gerund – were used as input for the collocational analysis. The collexeme analysis will

**Table 20:** Overview of datasets distinctive collexeme analysis.

	Nominal gerund	Verbal gerund	Total
Direct object	844	3253	4097
Nominal complement	360	8415	8775
Total	1204	11,668	

reveal which lexemes “occur freely in both constructions, and which have strong biases towards one of them” (Gries and Stefanowitsch 2004: 99).

## 7.4 Direct objects

### 7.4.1 Background

This section is concerned with gerund constructions occurring in functional slots such as the following:

(203) You may recall *the firing of Shirley Sherrod*. (COCA)

(204) You might just recall *dumping a boxcar back in Amarillo*. (COCA)

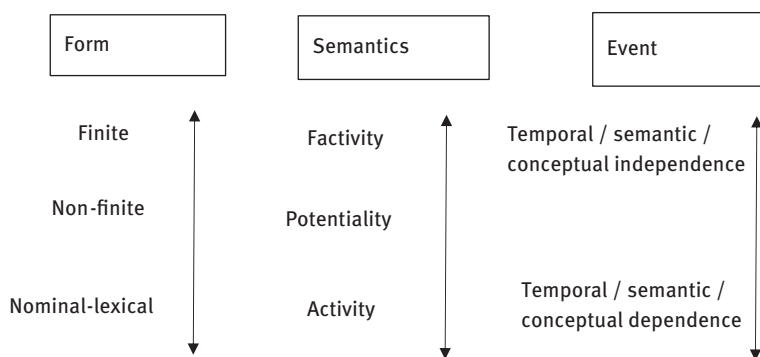
Nominal gerunds occurring in these slots are analyzed as direct objects, whereas verbal gerunds like (204) are more commonly referred to as complement clauses. One could question, then, if constructions as in (203) and (204) lend themselves to a comparison. Dixon (2005, 2006), for instance, underscores that, although both constructions are superficially similar, they posit a “considerable grammatical difference”, examples like (203) representing a noun phrase with the *-ing* form as its head, while verbal gerund forms are essentially clauses (2006: 16). Looking at both constructions from a diachronic perspective, however, reveals that a comparison between them is not completely unfounded. As argued in De Smet (2013), the fact that verbal gerunds historically derive from abstract noun phrases – more specifically, bare nominal gerunds – motivates a “distributional association” between present-day gerund complements and noun phrases, especially mass or bare plural nouns which refer to events, actions or situations (De Smet 2013: 144).

Interestingly, the semantic labels of activity and factivity discussed above often figure in broader studies on complementation patterns (cf. Dixon 2006; Cristofaro 2003). Turning again to Dixon (2006), for instance, we find a classification of



complement clauses into three recurrent (semantic) types, viz. fact, potentiality and activity complements. Based on typological evidence, factive complements are argued to have “similar structure to a main clause” (Dixon 2006: 23), while activity complements display more similarities to regular NPs, as they often lack tense and modality markers. In line with their lack of tense and modality markers, activity complements tend to exhibit a higher degree of temporal overlap with the main verb, whereas factive complements, being the more finite forms, are characterized by temporal independence from the matrix clause (Dixon 2006: 23).

The relation between (non-)finiteness and temporal integration is well-documented, and is often linked to principles of iconicity and subsumed under the so-called “binding hierarchy” (Givón 1980, 1990; Haiman 1983; Rohdenburg 1995; Verspoor 2000). Figure 22 provides a schematic representation of the most prominent claims that are made with regard to the binding hierarchy. It is argued that there is an inverse correlation between the syntactic integration of the complement clause into the main clause and its semantic independence from that main clause (cf. Givón 1990: 515–561, 973–975; Haiman 1983: 799–800; Gramley 1987; cited in Rohdenburg 1995: 367). Thus, non-finite complements, which tend to exhibit more syntactic integration with the matrix clause, are typically also temporally and conceptually dependent on that clause.



**Figure 22:** Semantic and conceptual categorization of complementation patterns (based on Dixon 2006: 23; Givón 1990; Verspoor 2000).

**Note:** While most studies only focus on the traditional clausal complement types, Verspoor (2000: 203) mentions nominal-lexical structures as ranking lowest on a scale of finiteness, therefore displaying the highest degree of conceptual integration when occurring in the direct object slot.

While these principles evidently form an overgeneralization of the linguistic reality, they do offer more background to the action/fact discussion in the context of nominal and verbal gerunds. First of all, they make explicit the link between the semantics of activity and factivity on the one hand, and the formal make-up of a construction on the other: the less finite a construction, the likelier it will be action-referring. Secondly, the literature on complementation provides us with additional predictions about the conceptual nature of different complement types, in that finite forms are typically associated with conceptual distance and temporal independence, while less finite (or more nominalized) forms are argued to evoke more conceptual and temporal integration with the main clause.

Based on the literature outlined above, the collocational analysis of direct objects/complements that is carried out in this chapter will focus on the following questions:

- (i) Do nominal and verbal gerunds combine with typical “containers” that are reflective of their status as state-of-affairs or propositions? More specifically, do nominal gerunds combine with predicates that are typically followed by an action referring complement (e.g. *observe*) and verbal gerunds with factive predicates (e.g. *regret*)?
- (ii) Do nominal and verbal gerunds conform to the binding hierarchy, i.e. do verbal gerunds, as the more “finite” form, show more conceptual distance to the semantics of the main clause, while nominal gerunds are more conceptually integrated in terms of time reference and meaning?

I will furthermore address the semantic profiles of nominal and verbal gerunds that have emerged from the multifunctional analysis presented in Part II of this study. Its observations are significantly different from the descriptions that are offered in the (typological) literature on complementation, as they consider verbal gerunds to be conceptually dependent constructions and nominal gerunds the conceptually independent ones. Based on the referential and aspectual analyses outlined in Chapters 4 and 5, I will address the following additional questions:

- (iii) Are nominal gerunds attracted to main verbs that are typically non-controlled and followed by an existentially presupposed entity?
- (iv) Are verbal gerunds more likely to occur in subject-controlled contexts and with main verbs that are more flexible with regard to their existential status?
- (v) Do we find an indication of typification vs. individuation in the types of contexts nominal and verbal gerunds occur in?
- (vi) Do nominal gerunds prefer contexts that imply temporal boundedness?

### 7.4.2 Results

In contrast to most studies that make use of collostructional analyses, I have not focused on the lexemes that are attracted to the constructions (i.e. gerunds) themselves, but on the matrix clause predicates that occur with these constructions. Moreover, as opposed to regular collocational analyses, which reveal which collocates are attracted to each construction separately, the distinctive collexeme analysis allows us to “abstract away from frequent elements that are common to both investigated constructions”, and it “highlights those elements that are distinctive for each respective construction” (Hilpert 2006: 144). This distinctive collexeme analysis was carried out using Stefan Gries’ collostructional analysis 3.2 R-script, which yields a list of lexemes that are ranked according to a value of collostructional strength.<sup>36</sup> The results of the analysis are summarized in Table 21: for each lexeme, the observed frequencies with nominal and verbal gerunds respectively are given, followed by its value of collostructional strength. In order to maintain some overview, only lexemes that are attested more than five times in the dataset have been listed.<sup>37</sup>

Interestingly, we find relatively little overlap between the verbs that occur with nominal and verbal gerunds: out of the lexemes that served as input for the collexeme analysis, only 25% are shared between nominal and verbal gerunds. Nominal and verbal gerunds thus clearly differ in their distributional patterns, which seems to confirm that there must be a semantic difference between both constructions. Let us now consider these results in light of the semantic descriptions that were offered in previous studies, starting with the distinction between actions/state-of-affairs and facts/propositions. Let me thereby emphasize once again that I do not define facts in their strictest sense, i.e. as situations that are presupposed true, but rather as propositions, which represent situations that can be evaluated according to their truth value but do not need to be true as such (e.g. *I thought that John would have been home, but he wasn’t*). Secondly, just because the gerund combines with a factive predicate does not mean it represents a fact or a proposition itself. Consider, for instance, the difference between (205a) and (205b). According to Dixon (2006: 28), in (205a) the speaker remembers “the

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<sup>36</sup> This value is based on the  $-\log_{10}$  transformation of the p-values that are provided by the Fisher-Yates exact test.

<sup>37</sup> Table (i) in the appendix provides a raw frequency list of all predicates that were attested with nominal and verbal gerunds and which served as input for the distinctive collexeme analysis.

**Table 21:** Matrix verb predicates attracted to nominal vs. verbal gerunds.

Nominal gerund (N = 844)		Verbal gerund (N = 3253)	
Colllexeme	Coll. strength	Colllexeme	Coll. strength
oversee (21:0)	14.53	consider (1:305)	29.90
allow (29:7)	13.85	try (0:195)	19.96
facilitate (26:9)	11.01	avoid (5:243)	18.46
improve (13:0)	8.97	enjoy (1:144)	13.13
accelerate (12:0)	8.28	love (0:125)	12.67
promote (15:3)	7.72	recommend (3:135)	10.06
follow (11:0)	7.59	risk (1:110)	9.74
enable (13:2)	7.13	suggest (2:120)	9.61
encourage (14:3)	7.11	remember (6:144)	8.45
announce (10:0)	6.90	like (2:105)	8.18
ban (13:8)	6.50	imagine (4:118)	7.65
complete (8:0)	5.51	mind (0:76)	7.65
forbid (10:3)	4.70	propose (2:77)	5.58
influence (8:1)	4.64	report (2:73)	5.22
affect (6:0)	4.13	resist (0:46)	4.61
criticize (6:0)	4.13	involve (28:221)	4.27
enhance (6:0)	4.13	deny (0:27)	2.7
address (8:2)	4.03	fear (0:24)	2.4
order (8:2)	4.03	prefer (0:24)	2.4
aid (5:0)	3.44	regret (0:20)	1.99
condemn (5:0)	3.44	favor (2:33)	1.80
demand (5:0)	3.44	advise (0:18)	1.80
supervise (5:0)	3.44	hate (0:18)	1.80
increase (6:1)	3.37	recall (5:48)	1.59
prohibit (9:5)	3.34	envision (0:15)	1.50
protest (7:3)	3.00	admit (0:14)	1.40

fact that something happened”, while in (205b), they remember “the details of the activity involved”. We should, therefore, keep in mind that combining with a factive predicate is not necessarily an indicator for the propositional status of the complement.

- (205) a. I remembered that I had visited Paris  
 b. I remembered visiting Paris (Dixon 2006: 28)

In what follows, I will first discuss the semantic types of predicates found with verbal gerunds, claiming that the action-fact distinction is not as clear as one might expect. That factive predicates do not necessarily imply a propositional

reading of their complements becomes immediately clear when we look at some of the factive verbs that can be found in Table 21. While predicates like *regret*, *admit*, *mind*, *remember*, *recall* and *deny* are typically considered to be factive (cf. Kiparsky and Kiparsky 1970), the verbal gerunds that combine with them do not always appear to conceptualize facts or propositions. The small minority of verbal gerunds that combine with an explicit oblique subject, as in (206), are likelier to conceptualize propositions, but this is less obvious with the verbal gerund in (207), which does not allow for epistemic modification (*?I don't mind perhaps fighting you in open space*). The same goes for the verbal gerunds in (208) and (209), which refer to past situations, but could be argued to refer to events rather than propositions. Note moreover that the latter two examples do not maintain their truth value under negation, which would be expected if they denote facts; instead, the hearer will more likely interpret the situations expressed by the verbal gerunds in (208) and (209) (*noticing her taking them*; *seeing the dress*) as having never occurred.

(206) In fact, I recall *him taking a trip to Afghanistan prior to taking this job at his own expense and at considerable risk*.

(207) I don't mind *fighting you in open space*, but I hate to put you in a corner.

(208) If you look at most of the pictures my mother took of us, you'll see we're not looking at the camera. I don't even remember *noticing her taking them*, so it never got irritating.

(209) Pancho didn't recall *seeing the dress before*; Mandy must have bought it in one of Selene's shops.

Rather than centering around factivity, the types of predicates typically combining with verbal gerunds reflect the variety of semantic clusters that have been associated with gerundive complementation in general (see De Smet 2013 for an overview), such as negative implicative verbs (*avoid*, *resist*), emotive verbs (*like*, *enjoy*) and proposal verbs (*recommend*, *suggest*, *propose*). In contrast to factive verbs, these verbs are less likely to impose a propositional reading on their complements. It is not immediately clear, for instance, whether the predicates in (210)–(212) are followed by situations that represent something that might *occur* (i.e., a state-of-affairs), or whether they are followed by a situation that has *truth value* (i.e., a proposition). While the verbal gerund with oblique subject in (210) is more likely to receive a propositional interpretation, the verbal gerunds in

(211)–(212) more readily invite an action-referring interpretation.<sup>38</sup> This ambiguity might be attributed to the fact that these predicates, as opposed to factive predicates, do not refer to past situations, but typically create virtual mental spaces, containing counterfactual, hypothetical or future situations.

(210) You will look elegant enough before your clients, but the pale color will prevent *you overstepping your bounds as a tradesman* and offending them.

(211) Fortunately, he managed to avoid *shattering the lantern*.

(212) I suggest *contacting the manufacturer* or taking the amp to a repairman.

The predicates that combine with nominal gerunds can likewise be divided into a number of semantic types, which center on factivity, action semantics and modal meaning. It can first of all be observed that the nominal gerund's alleged action-referring status does not prevent it from combining with factive predicates; witness for instance the examples with *criticize*, *condemn* and *protest*:

(213) I have condemned *this killing of people* and using live ammunition to kill people.

(214) She spent years protesting *the jailing of dissidents*.

Yet, similar to the verbal gerunds in (207)–(209), the situations referred to by the nominal gerunds do not receive a purely propositional interpretation (“the fact that people have been killed”, “the fact that dissidents are jailed”), but appear to retain a more eventive reading (“the act of killing people”, “the act of jailing dissidents”), i.e. they represent situations that can be said to occur.

Other verbs, then, more clearly emphasize the action-referring status of the nominal gerund. Lexemes like *oversee* and *follow*, for instance, were already mentioned in Vendler (1968) as typical containers for nominal gerunds. Similar verbs include *supervise*, *accelerate* and *complete*:

(215) The current president Lee Myung-bak oversaw *the replanting of millions of trees around the capital*.

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<sup>38</sup> It should be noted, however, that it is difficult to evaluate this objectively. One might argue that epistemic modification sounds somewhat better in (210) (*you perhaps overstepping your bounds*) than in (211) and (212), but, in my opinion, the criterion of epistemic modification is often inadequate for assessing the propositional value of gerundial complements.

- (216) Maybe, but that's better than the endless quarreling between Adam and Eve that follows *the eating of the forbidden fruit* in the ninth book of *Paradise Lost*.
- (217) The auction site, in fact, accelerated *the faking of antiquities for the international art market*.
- (218) Sir Charles would be supervising *the swapping of the steam engines and generators*.
- (219) She wouldn't let me complete *the tuning of the strings* until you were here to share this with us, John.

Another semantic cluster that is attested with nominal gerunds carries modal meaning. Examples (220a–b) illustrate two predicates with deontic modality (other lexemes include *ban*, *order*, *demand* and *forbid*), while (221a–b) provides examples with a more force-dynamic meaning, as *affect* and *enable* also imply causation. While these types of predicates can be considered strong indicators of a state-of-affairs complement, they do not emphasize the action-referring status of the nominal gerund in the same way as the predicates in (215)–(219) did. Note that these predicates are also typically followed by *types* of events rather than single, individuated situations.

- (220) a. While his appeal was pending, the government changed its regulation, allowing *the carrying of loaded firearms on federal land whenever that conduct is permitted under state law*.  
 b. New rules prohibited *the selling of glass bottles and fried foods*.
- (221) a. (. . .) love is often considered to reside deep within people's hearts, at the core of mentality and spirituality, where it has traditionally been thought to affect *the healing of mind, body, and soul*.  
 b. A clean energy bank, like the one included in the House and Senate bills, could be the mechanism to enable *the appropriate sharing of risk*.

If we consider these observations in light of the traditional dichotomy between actions and facts (or state-of-affairs and propositions), we can conclude that a collexeme analysis of nominal and verbal gerunds problematizes the traditional dichotomy in two ways. First of all, it shows that the distinction between actions and facts does not appear to be relevant in certain contexts, or, that the distinction is at least not very pronounced, witness, for instance, the use of

both nominal and verbal gerunds with factive predicates in examples (206)–(209) and (213)–(214). Both nominal and verbal gerunds combine with a broader range of predicates that do not necessarily emphasize the action or fact status of their complement, but focus on other aspects of its meaning, e.g. the verbal gerund's status as a realis or irrealis situation with negative implicative verbs or the semantics of force-dynamics with nominal gerunds. Moreover, when they combine with factive predicates, both gerund types do not establish a clearly propositional meaning, but instead retain their action-referring semantics. This leads us to the second issue, which lies at the core of the problems that traditional analyses are faced with. If we assume a privative semantic opposition between nominal and verbal gerunds – i.e. both nominal and verbal gerunds can denote actions, but verbal gerunds can also denote facts – this leaves open the question of what exactly distinguishes action-referring nominal gerunds from action-referring verbal gerunds.

I argue that we should move away from the labels of action and fact, which are at the same time too specific and too vague, and instead situate the distinction between nominal and verbal gerunds on a more abstract, conceptual level. The primary indicator for this conceptual distinction is the distinct control behavior of nominal and verbal gerunds: while the implicit subject of verbal gerunds is typically coreferential with the subject of the matrix clause, i.e. the verbal gerund is subject-controlled, nominal gerunds typically lack such a control relation, witness for instance examples (207)–(209) vs. (220)–(221).

In fact, this fundamentally different control behavior seems to be the only aspect that unites the various subtypes of matrix predicates that are typically attracted to nominal vs. verbal gerunds. All verbs that are listed with nominal gerunds tend to display a non-controlled pattern, while verbs attracted to verbal gerunds typically have a subject-controlled complement, with the exception of verbs of suggestion. This distinction roughly corresponds to what Thompson (1973: 381) calls “private” vs. “public” predicates. The former include predicates that “involve an individual and his private thoughts, feelings, and personal welfare” and are typically subject-controlled, while the latter describe activities “which [are] generally shared” (Thompson 1973: 381) and therefore tend to lack such control relations.

A second potential generalization involves the temporal orientation of the matrix predicates. The majority of predicates that are attracted to nominal gerunds are generally followed by situations or events that have already taken place or are taking place at that moment, i.e. they are “same-time” or “backward-referring” predicates (Egan 2008: 39). Interestingly, looking at the predicates from a temporal point of view allows us to surpass the traditional distinction between action and fact, as both the action-referring and factive predicates listed above can be



considered same-time or backward-referring (see, for instance, *oversee*, *accelerate*, *follow*, *complete* as well as *condemn*, *criticize*, *protest*). Verbal gerunds, on the other hand, show more versatility, combining quite often with virtual space-building verbs such as *imagine*, *propose*, *resist* and *risk*, but also with backward-referring verbs as *remember*, *recall*, *report* and *admit* as well as verbs that allow for both interpretations, like *enjoy*, *hate* and *try*.

It follows, then, that the semantics of the gerund construction itself is of a more abstract nature, which, I argue, largely corresponds to its prototypical referential and, to some extent, its aspectual behavior. In line with the referential strategies which they typically employ, nominal gerunds prefer verbs that lack subject coreferentiality, while verbal gerunds tend to be controlled by the subject of the predicates they attract. Secondly, in accordance with their preferred existential status, nominal gerunds are shown to be embedded more often in contexts that refer to past or present situations, while verbal gerunds do not appear to prefer verbs with a particular temporal orientation. This observation is likewise in line with the observation that nominal gerunds tend to be temporally bounded more often than verbal gerunds when it comes to viewpoint aspect.

Finally, the results discussed above suggest that the so-called “binding hierarchy” of complement types, which ranks complement clauses according to their degree of conceptual dependence on the matrix clause, cannot be readily applied to nominal and verbal gerunds. Contrary to what one might expect, nominal gerunds, as the “less finite” form, are typically more conceptually independent from their matrix clause – as evidenced by the lack of control relations – while verbal gerunds display more conceptual integration. A similar observation is made in Duffley (2014: 149–150), who investigates control patterns with *to*-infinitives, verbal gerunds and deverbal nouns such as the nominal gerund. He points out that “as far as control is concerned, the scale runs in exactly the opposite direction: it is the *to*-infinitive that exhibits the greatest degree of event integration, with a lesser degree of notional binding being found with the gerund-participle [verbal gerund, CM], and an even lower degree with the deverbal noun”. It should be noted, however, that while nominal gerunds indeed rank lower than verbal gerunds with regard to their degree of *clausal* finiteness, they do dispose of more *nominal* grounding elements, i.e. determination. Consequently, nominal gerunds do not need to rely on matrix clause elements to receive spatiotemporal grounding, which in turn lends them more conceptual independence from this matrix clause. Thus, rather than refuting the binding hierarchy, I argue that it is the ranking of nominal and verbal gerunds on a scale of clausal finiteness that is inaccurate. Instead, nominal and verbal gerunds should be placed on a scale that ranges from nominal to clausal means of grounding and binding.

## 7.5 Noun complements

In contrast to gerunds in the direct object or complement position, which have received a fair amount of attention in previous studies, gerunds functioning as nominal complements are as yet an underresearched area. Still, they are interesting for several reasons. First of all, noun complementation is found quite often with gerunds, especially with verbal gerunds, and could provide us with another perspective on their semantics. Secondly, just as verbal complements derive a great deal of their semantics from that of the matrix clause predicate, nominal complements can be influenced by the semantics of their head noun. It will therefore be interesting to see which types of nouns are attracted to nominal gerunds as opposed to verbal gerunds, and what this might reveal about the semantics of the gerund construction itself.

A distinction can be made between two types of N + PREPOSITION + GERUND constructions, viz. either the gerund functions as postmodifier, as in (222), or it is a nominal complement, as in (223) (Huddleston and Pullum 2002; Keizer 2007: 65).

(222) This institute is located in Albuquerque, New Mexico and has a new facility for *the teaching of flamenco dance*. (COCA)

(223) (. . .) this recollection of *the first crossing of the Atlantic by Christopher Columbus 500 years ago* (. . .). (BNC)

While it is not always easy to draw the line between postmodification and complementation, I have decided to exclude clearly postmodifying uses, as they establish a weaker semantic link between the head noun and its prepositional complement. While postmodifiers serve to “enrich” the information provided by the head noun, complements are typically “licensed” by the head noun and thus “complete” rather than enrich the meaning of the noun phrase (Keizer 2007: 65). Accordingly, nouns that are followed by a complement are of a more relational nature, i.e., their valency and meaning allow them to create arguments that are needed to complement their semantics and on which they are conceptually dependent (Langacker 1987a: 277; Davidse 2015). In (223), for instance, the noun “recollection” evokes an empty argument indicating “the thing that is recollected”, while the same does not immediately hold for “facility”.

Within the category of noun complementation, we can discern two subtypes, viz. appositional and non-appositional constructions, as illustrated in examples (224)–(225). In the case of appositional complements, the head noun and its complement are characterized by a relation of “identity of reference” (Quirk et al. 1985). In (224), for instance, the situation described by the verbal gerund –

*examining the hiring bias issue* – is conceptualized as a ‘task’, meaning that both the head noun and its complement essentially refer to the same concept, which is confirmed by the fact that the noun ‘task’ can be omitted without changing the meaning of the sentence. Non-appositional constructions such as (225), on the other hand, do not involve such a relation. Indeed, the activity of *shooting lions* is not conceptualized as a ‘ban’, but rather as something that is the object of the ban. Both appositional and non-appositional uses have been included in this study. Furthermore, I have decided to include a number of constructions that could also be classified as complex subordinators, such as *in the process of* or *in response to* in examples (226) and (227), since these constructions still interact with their complements on a semantic level despite their different lexicogrammatical status. In (226), for instance, the complex subordinator indicates that the following noun phrase can be viewed as ongoing, while *in response to* in example (227) implies presupposedness.

(224) His faith-based task force (consisting of people from both sides of the debate) was not charged with the task of *examining the hiring bias issue*.

(225) (. . .) a statewide ban on *the Sunday retailing of alcohol*.

(226) About 800 to 900 American families are right now in the process of *adopting kids from Haiti*.

(227) In response to *the killing of Treyvon Martin in Florida* (. . .).

The results of the distinctive collexeme analysis are presented in Table 22. This time, for reasons of space, only lexemes that occur more than once in the datasets are listed.<sup>39</sup>

As in the collexeme analysis of predicates, we find very little overlap between nouns that are attracted to nominal vs. verbal gerunds: only 20% of all nouns in the datasets are shared between both constructions. Note, moreover, that because nominal gerund complements differ greatly in frequency from verbal gerund complements, lower frequency items with nominal gerunds still receive a significant value of collostructional strength, while nouns that combine with verbal gerunds need to occur quite often in order to be significantly attracted. For sake of clarity,

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<sup>39</sup> Especially with nominal gerunds, we find many instances that occur only once with the nominal gerund but are not attested with verbal gerunds, resulting in a significant value of collostructional strength. In order to maintain some overview, however, I have decided to exclude these instances from Table 22.

**Table 22:** Head nouns attracted to nominal vs. verbal gerunds.

Nominal gerund (N=360)		Verbal gerund (N=8415)	
Collexeme	Coll. strength	Collexeme	Coll. strength
evidence (6:0)	8.25	way (0:417)	8.02
anniversary (6:1)	7.42	idea (0:275)	5.25
criticism (5:2)	5.58	chance (0:169)	3.20
ban (7:10)	5.50	process (2:243)	2.80
story (6:14)	3.88	hope (0:145)	2.74
call (4:4)	3.71	difficulty (0:127)	2.40
need (3:2)	3.15	interest (0:127)	2.40
occasion (3:2)	3.15	mean (0:124)	2.34
account (3:3)	2.86	method (2:206)	2.21
contribution (4:9)	2.77	job (0:106)	2.00
anger (2:0)	2.74	strategy (0:105)	1.98
control (2:0)	2.74	risk (0:103)	1.94
documentary (2:0)	2.74	goal (1:147)	1.92
end (2:0)	2.74	cost (1:146)	1.90
film (2:0)	2.74	possibility (0:92)	1.73
increase (2:0)	2.74	purpose (0:92)	1.73
inquiry (2:0)	2.74	task (0:89)	1.68
outrage (2:0)	2.74	importance (2:162)	1.56
site (2:0)	2.74	benefit (0:80)	1.50
retaliation (2:0)	2.74		
result (6:28)	2.56		
apology (2:1)	2.28		
decrease (2:1)	2.28		
regulation (2:1)	2.28		
revenge (2:1)	2.28		
aftermath (2:2)	1.99		
belief (2:2)	1.99		
response (2:2)	1.99		
question (5:27)	1.98		
concern (5:29)	1.87		
blame (2:3)	1.78		
book (2:3)	1.78		
demand (2:3)	1.78		
explanation (2:4)	1.62		
study (2:4)	1.62		
involvement (2:5)	1.49		
issue (4:26)	1.44		
skill (4:27)	1.39		

Table (i) in the appendix provides a raw frequency list of nouns that combine with nominal and verbal gerunds based on the input files. It should also be remarked that while verbal gerunds typically combine with head nouns that are followed by an *of*-phrase, nominal gerunds combine with a broader range of prepositions (e.g. *ban on*, *call/need for*, *outrage at*). This can be mainly attributed to the so-called *horror aequi* principle, which posits that language users have a tendency to avoid identical and adjacent grammatical elements, in this case the repetition of the preposition *of* with nominal gerunds.

While much attention has been devoted to the lexicogrammatical status of various types of noun postmodification or complementation (see, for instance, Quirk et al. 1985; Huddleston and Pullum 2002; Biber et al. 1999; Keizer 2007), semantic typologies of noun complements are, in contrast to verb complementation, not widespread. For this analysis, I will draw on Schmid's (2000) semantic classification of so-called shell nouns, i.e. "abstract nouns that have (. . .) the potential for being used as conceptual shells for complex, proposition-like pieces of information" (2000: 4), such as the noun *problem* in example (228).

(228) The (big) problem was that I had no money. (Schmid 2000: 3)

Even though not all nouns listed in Table 22 qualify as shell nouns, the semantic classification is nonetheless largely applicable. In addition to factual and eventive nouns, as in examples (229)–(230), Schmid discerns linguistic (231), mental (232), modal (233) and circumstantial (234) uses. Each example illustrates just one of a number of subtypes that are distinguished for each semantic function.

(229) . . . if it is really serious about the *problem* of global warming. (Schmid 2000: 125) [Factual: attitudinal]

(230) The first *action* was to place the vessel under cover and remove the deck-house. (Schmid 2000: 263). [Eventive: general]

(231) (. . .) the ageless *observation* that football is a funny old game. (Schmid 2000: 155) [Linguistic: illocutionary]

(232) Nobody likes the *idea* of aborting elephants but, on reflection, surely it is preferable to slaughtering adults. (Schmid 2000: 192) [Mental: conceptual]

(233) (. . .) the *likelihood* that they will consume rust particles. (Schmid 2000: 241) [Modal: epistemic]

- (234) We are winning against drugs but the only foolproof way is to bring in blood tests. (Schmid 2000: 286) [Circumstantial: general]

Interestingly, it can be observed that the majority of nouns occurring with nominal gerunds can be classified as factual nouns, which are typically followed by presupposed complement clauses (also see Davidse 2015). Examples include evidential nouns like *evidence*, attitudinal uses like *criticism*, *anger*, *outrage*, *retaliation*, *apology*, *revenge*, *concern* and *blame*, causal uses like *result*, *aftermath* and *response* and nouns that do not readily fit into Schmid's classification, but which are typically followed by presupposed entities, such as *inquiry*, *contribution*, *involvement* and, to a lesser extent, *regulation* and *ban* – which can be followed by both presupposed and virtual, future situations. As was the case with factive predicates, however, this does not necessarily mean that the complement is a fact or proposition. The nominal gerund in example (239), for instance, is clearly more action-referring than propositional, as it refers to an event that occurs in the past, present and/or future, without representing it as a piece of information about the world that may be evaluated in terms of its truth value.

- (235) Some of the many items they found show distinct evidence of *the blending of cultural traditions*.

- (236) Mr. Karoui's public apology over *the airing of Persepolis*.

- (237) The result of *this pillaging of productive farmland* has meant the end of Zimbabwe's commercial agriculture.

- (238) (. . .) it was Moscow that had made a decisive contribution to *the dismantling of the world communist system* through the work of Mikhail Gorbachev and, later, Boris Yeltsin.

- (239) Under new legislation, the FAA is being order (*sic*) to drop regulations for *the testing and licensing of commercial drones* by 2015.

Closely related to these factual uses are a group of nouns represented by *explanation*, *account*, *story*, *documentary*, *film* and *book*. While the first three nouns could be classified as linguistic, illocutionary uses, they are not necessarily followed by reported utterances, as is the case in Schmid's classification. Witness, for instance, the difference between examples (240) and (241):

- (240) I didn't buy the story that you were a specter.

(241) What's the story of the writing of that song?

Instead, I propose that these nouns constitute a subtype of factual nouns, which are characterized by an increased degree of “conceptual distance”. While there was still a certain link between the contents of the complement and that of the noun with the factual nouns in examples (235)–(239), such as a certain attitude (*apology*) or a causal relation (*result*), this subtype typically lacks such conceptual overlap.<sup>40</sup> In example (242), the situation described by the nominal gerund can hardly be argued to interact with the semantics of the head noun *documentary*; it merely represents what the documentary is about.

(242) (. . .) the premiere of the documentary about *the making of Bruce Springsteen's album*.

A third and fourth type of nouns that attract nominal gerunds is typically followed by more eventive complements. The third type includes modal, deontic uses represented by nouns as *call*, *need* and *demand*, as illustrated in example (243), while the fourth type includes temporally-oriented eventive nouns such as *end*, *increase* and *decrease*, as in (244). While the former type is typically followed by non-presupposed complements, the latter is followed by existentially actual(izing) situations.

(243) There has been no call for *the severing of the relationship between the United States and Afghanistan*.

(244) Rising global demand for the pines for wood for large-scale construction projects and for garden furniture led to a huge increase in *logging of the trees in Amur tiger range*.

A last subtype that fits into Schmid's semantic typology is that of circumstantial uses, represented here by the nouns *anniversary* and *site*, which respectively focus on the time and place of the situation in the complement. Interestingly, these

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<sup>40</sup> It could also be argued that these examples represent instances of postmodification rather than complementation. While they are definitely borderline cases, I have decided to include them because nouns like *documentary*, *film* and *story* imply the existence of a certain subject matter and as such license the following prepositional complement.

circumstantial uses typically involve historic nominal gerunds (see Chapter 4), i.e. nominal gerunds that refer to a historic event which has a fixed position in time and space. I will come back to the particular status of these constructions in Section 7.6.

(245) Today is the 200th anniversary of *the signing of the Bill of Rights*.

(246) (. . .) the historical site of *the miraculous turning of water into wine by Jesus*.

Importantly, there is a clear tendency for nominal gerunds to occur in non-appositional contexts, i.e. contexts where there is no identity of reference between the head noun and its complement, the only exceptions being nominal gerunds that combine with the nouns *occasion* and *issue*, as in examples (247)–(248). Their appositional structure can be evidenced by the fact that the head noun can be omitted without changing the meaning of the sentence:

(247) More times than not, "the exercises on the occasion of *the opening of the Orphan Asylum* occupied the greater part of the day" (. . .).

(248) Are you going to emphasize the issue of *protecting of women*?

The analysis of verbal gerunds, then, while yielding fewer significantly attracted collexemes, reveals a variety of semantic subtypes as well. First of all, there appear to be no unambiguously factual uses. While nouns as *difficulty*, *importance* and *benefit* can occur with factive complements, as in (249), they also frequently occur in a more eventive sense, as in (250).<sup>41</sup>

(249) So, you know, I have the benefit of *knowing the complexities of all these kids*.

(250) The benefit of *hiking with guides* is that they are experienced at pointing out the differences between the live oaks, persimmon, cedar and ash juniper trees.

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<sup>41</sup> Because the collocational analysis has not taken into account the various senses that can be expressed by particular nouns, I cannot give any figures with regard to the distribution of factual vs. eventive uses with these nouns.



An unambiguously eventive use is represented by the noun *process*, which, as mentioned earlier, can also occur as complex subordinator under the form *in the process of*.

(251) I know that Michelle went through the process of *closing schools in, in Washington, D.C.*

(252) (. . .) she and her husband Jesse were in the process of *adopting this little boy*.

Secondly, a number of modal uses can be discerned. While *possibility* and *risk* can be classified as epistemic, the nouns *job* and *task* are analyzed by Schmid as deontic uses. The noun *chance* can represent both epistemic (255) or dynamic (256) modal uses.

(253) The Chinese government is exploring the possibility of *granting paid paternity leave in Hong Kong*.

(254) Coaches understand that once a program is successfully built, the momentum often continues, making the job of *attracting top recruits and producing winning teams* more sustainable.

(255) The hooks pull free of the bait when you strike and embed in the muskie's mouth, reducing the chance of *gut-hooking the fish*.

(256) The walking would be easier, and he would at least have the chance of *encountering other travelers*.

A third type involves circumstantial uses, as illustrated by the nouns *way*, *mean*, *method* and, to a lesser extent, *strategy*. While the circumstantial nouns with nominal gerunds were of a more specific nature, pointing to the time and place of the situation described in the complement, circumstantial nouns with verbal gerunds have a more general semantics and are therefore often complemented by generic events, as in (257).

(257) It was a way of *exercising power and control in the relationship*.

A final subtype is represented by mental uses, a semantic class that is not found with nominal gerunds. Two specific uses are attested with verbal gerunds, viz. volitional nouns as *goal*, *purpose* and *hope* and the conceptual noun *idea*. Just

like modal and circumstantial uses, mental nouns are typically complemented by situations that express activities rather than facts (Schmid 2000: 276).

(258) I set myself the goal of *making three new friends*.

(259) I was actually toying with the idea of *picking his pocket* when a noise to the other side of my barrel told me someone was lurking there.

With regard to the distinction appositional vs. non-appositional, we can observe that noun complementation with verbal gerunds may involve identity of reference, as is mostly the case with nouns like *job* and *task*, as well as with the noun *possibility* in example (253), which could be omitted without drastically changing the meaning of the sentence.

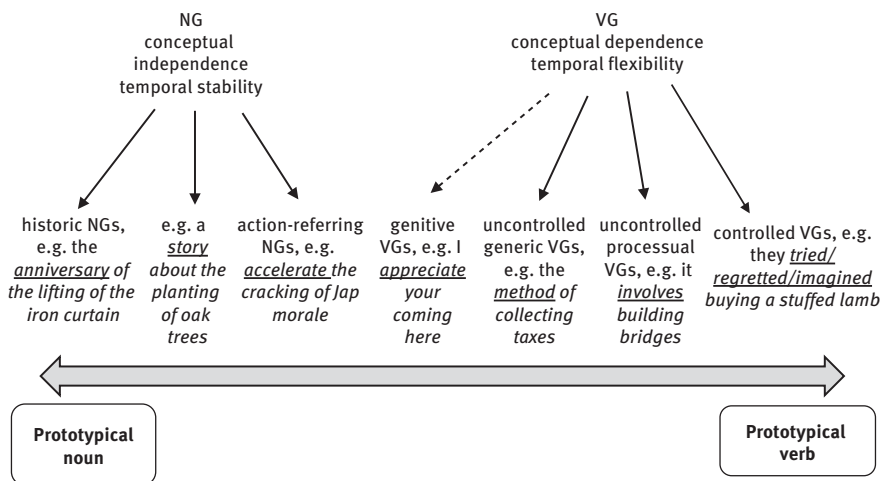
What does the distinctive colllexeme analysis of noun complement contexts tell us about the semantics of gerunds in general? First of all, the colllexeme analysis of N+preposition+gerund constructions confirms my earlier finding that the action-fact dichotomy does not capture the actual distribution of nominal and verbal gerunds. It is the nominal gerund that prefers factual nouns (even though these are not necessarily followed by propositional complements), while verbal gerunds display more action-referring uses, as evidenced by the frequency of eventive as well as circumstantial and mental nouns. We do, however, find further evidence of the claims made in Chapter 4, where it was argued that nominal gerunds resemble prototypical nouns in that they are typically conceptually independent from contextual elements to establish reference and tend to refer to situations as being existentially presupposed. Verbal gerunds, on the other hand, were described as conceptually dependent and existentially flexible constructions, thus resembling prototypical verbs. This is confirmed by the colllexeme analysis of noun complement constructions: nominal gerunds seem to prefer contexts that refer to past or present situations, while verbal gerunds are more common with lexemes that build virtual spaces. The analysis of noun complementation constructions has also revealed that nominal gerunds prefer non-appositional structures and thus typically display a higher degree of conceptual distance towards the head noun, while verbal gerunds are attracted to (semi-)appositional structures which exhibit more conceptual overlap between the head noun and its complement. More specifically, the situations described by verbal gerunds can be represented as a ‘possibility’, ‘task’, ‘difficulty’, ‘risk’, ‘goal’, ‘idea’ etc. The same does not hold for a large number of the situations designated by nominal gerunds, which cannot be said to conceptualize a ‘ban’, ‘account’, ‘anniversary’ or ‘evidence’.

The aspectual status of nominal and verbal gerunds is less apparent in the types of nouns they combine with. While the factual nouns occurring with nominal gerunds can be viewed as contextual indicators of boundedness, as they indicate that the situation described in its complement is located in the past, the difference between typification and individuation is not necessarily reflected in the contexts gerunds occur in.

## 7.6 Towards a dynamic semantics

For years, researchers have posited an action vs. fact distinction to describe the semantics of gerund constructions, thereby disregarding the variety of contexts the gerund occurs in. The collocational stance taken in this chapter has shown that this distinction is an oversimplification of the linguistic reality. My analysis has above all revealed that nominal and verbal gerunds themselves do not have a well-defined and well-delineated semantic profile, but are instead characterized by a number of abstract, conceptual features that can be filled in more concretely by specific contextual slots. By mapping out these distributional preferences, the collocational analysis complements the multifunctional analysis of Chapters 4 and 5 and contributes to a more nuanced view of the gerund's semantics. This is illustrated in Figure 23, which further elaborates the comparisons made in Part II between nominal and verbal gerunds on the one hand, and prototypical nouns and verbs on the other.

Figure 23 illustrates how particular collocates can highlight or downplay the prototypical profile of nominal and verbal gerunds, thus resulting in a cline from conceptually noun-like to verb-like uses. A “regular” nominal gerund could, for instance, be illustrated by the example “a story about the planting of oak trees”, as it presents a conceptually independent and time-stable entity. These features are emphasized more clearly by the noun “anniversary” and the accompanying historic nominal gerund in a construction like “the anniversary of the lifting of the iron curtain”. Instances like these do not derive their temporal and spatial location from the context, but are characterized by an inherent spatiotemporal orientation (most of us approximately know when and where “the lifting of the iron curtain” has taken place). Because of this fundamental conceptual independence and existential presupposition, historic nominal gerunds most closely resemble prototypical nouns. Action-referring predicates such as “accelerate”, on the other hand, downplay the temporal stability or presupposition of the nominal gerund, and conceptualize it as a process unfolding over time. One could argue, then, that these nominal gerunds exhibit more characteristics that are conceptually verbal.



**Figure 23:** A distributional perspective on the noun-verb cline with nominal and verbal gerunds.

The abstract features that have been attributed to verbal gerunds involve the notions of conceptual integration or dependence and temporal flexibility. This is clearly illustrated in an example like *the grandparents tried/regretted/imagined buying a stuffed lamb*. Rather than showing a preference for a factive verb like *regret*, verbal gerunds frequently combine with all three predicates, which are typically subject-controlled and set up a specific temporal and modal space. On the more noun-like end of the cline we find examples like *it involves building bridges*, where we find less conceptual overlap between the semantics of the predicate and its complement (no control relation) but where the situation expressed by the complement is still viewed as a situation unfolding over time.

Finally, what about the two verbal gerund types which were considered to be more “noun-like” in Chapter 4, viz. generic verbal gerunds and verbal gerunds with a genitive subject? As could be observed in Section 7.5, there are quite a number of lexemes combining with verbal gerunds which impose a generic reading on their complements, such as *the method of collecting taxes*. As was argued in Chapter 4, instances like these reflect the time-stable conceptual profile that is typical of regular abstract nouns and, therefore, they are situated more towards the noun-like end of the cline. The fact that these generic space-builders were listed among the significantly attracted collocates shows, however, that the generic conceptualization of an event forms an integral part of the verbal gerund’s semantics.

Verbal gerunds with genitive subject, due to their infrequency in the dataset, were not subjected to a separate distinctive collexeme analysis. However, a survey of the types of verbs and nouns they combine with shows that they indeed often occur in factive slots which sanction a propositional reading. Similar to prototypical “bare” verbal gerunds, verbal gerunds with a genitive subject combine both with backward-referring predicates such as *appreciate*, as well as virtual space-builders such as *chance*. In both cases, however, and in contrast to the examples of verbal gerunds listed in the sections above, the verbal gerunds in examples (260a–b) are propositional rather than eventive: in (260a), it is possible to replace the gerund by “the fact that you are taking the time”, while the meaning of the noun *chance* in (260b) is equivalent to the epistemic notion of “likelihood” rather than the more deontic “opportunity”. The claims made in the literature on the factive/propositional nature of verbal gerunds, then, appear to apply especially to verbal gerunds with genitive subject, and not to the verbal gerund category in its totality. Due to the overall infrequency of verbal gerunds with explicit subject (see Table 5, Chapter 4), however, I argue that factivity is less central to the meaning of the verbal gerund category than has thus far been assumed.

(260) a. I really appreciate *your taking the time*.

b. At a certain point, we'll have rolled the dice so many times that the chance of *our beating our best score* drops close to zero.

Figure 23 not only shows the dynamic interactions between gerund constructions and their context, it also sheds light on differences between nominal and verbal gerunds that might not be obvious at first. Even though it is perfectly possible to form an utterance like “a story about planting oak trees”, the lexeme *story* instead appears to be more strongly attracted to nominal gerunds because it implies greater conceptual distance. As such, the cline presented in Figure 23 can provide an answer to the question that is left open in traditional analyses, namely what exactly constitutes the difference between action-referring nominal and verbal gerunds.

In addition to their *referential* profiles, the distributional preferences of nominal and verbal gerunds can also be linked to their *formal* make-up. Nominal gerunds, for instance, overwhelmingly occur with a definite article (see Chapter 4), the influence of which is not only manifested on a referential level, but also trickles down into the nominal gerund's distributional potential. As noted in De Smet (2007: 82), “the presence of the definite article reduces the likelihood of a gerund construction receiving a controlled interpretation”, and, correspondingly, plays a role in the attraction of non-controlled predicates to nominal gerund

constructions. The same can be said for the definite article's influence on the existential status of the nominal gerund, facilitating its occurrence in contexts that imply existential presupposition while blocking it in others.

The referential profile of verbal gerunds, then, is argued to be driven by its *lack* of explicit determining elements. As the majority of verbal gerunds occur as bare forms without explicit subject, they ground their referents – i.e. locate them in time and space – in alternative ways, by means of control relations for instance, as in example (261).

(261) He remembered *practicing the same thing in the natatorium at the academy during seamanship training*.

Due to the indeterminacy of the verbal gerund form itself with regard to the accessibility and temporal status of its referent, verbal gerunds have come to rely on information that is available from the broader context, thus resulting in conceptual dependency. This is, amongst others, reflected in the types of predicates that they combine with, as described in De Smet's (2013) work on complementation patterns: a verb like *think* for instance, does not combine with gerundive complementation because it “makes no predictions about the temporal and modal interpretation of the situation in its complement clause. Tellingly, complement-taking predicates of this kind usually require a finite complement” (De Smet 2013: 142). Verbs like *imagine*, on the other hand “impl[y] that the event is necessarily situated in a space of unreality, which reduces the need for modal and temporal grounding” and which thus makes it more compatible with a verbal gerund complement. This line of reasoning can be extended to noun complementation as well, where it could be observed that verbal gerunds tend to combine with nouns that display more conceptual overlap with the contents of their complement.

## 7.7 Base verbs with nominal and verbal gerunds

The dataset of nominal and verbal gerunds functioning as direct objects and nominal complements also served as input for a second distinctive collxeme analysis, which focused on the verbs attracted to the gerund constructions themselves. Because they are derived by means of the same *-ing* suffix, nominal and verbal gerunds are often assumed to derive from similar types of base verbs. An exception is the class of stative verbs, such as *be*, *have* or *love*, which are known to readily occur as verbal gerunds but only rarely as nominal gerunds. A study of nominal and verbal gerunds in Early and Late Modern English

(Fonteyn 2019: 159–163) has furthermore shown that, in addition to stative verbs, verbal gerunds appear to attract causative verbs such as *causing* or *putting* and semantically empty verbs such as *making* and *doing*. Distinctive base verbs for Modern English nominal gerunds, on the other hand, are often non-eventive or lexicalized (e.g. *meaning*, *building*).

Before going into the results of the present collocational analysis, let us first briefly reconsider the data I used as input. As discussed in the methodological section, verbal gerunds were sampled more restrictively than nominal gerunds in order to ensure that both constructions allowed alternation from a grammatical point of view. Because the verbal gerunds were extracted by means of the tag \*vvg, which only tags verbs in *-ing* with lexical meaning, the auxiliary verbs *be*, *do* and *have* were excluded from the collocational analysis – even when they occurred in non-auxiliary uses, as in (262).

(262) Do you regret *doing that add with Nancy Pelosi*? (COCA)

While nominal constructions with *being* typically have a lexicalized meaning (e.g. *the being of God*), they do occasionally occur with the verbs *doing* and *having*, even in their auxiliary use, as in (263b):

- (263) a. And we're trying to talk about justice and *the doing of justice*, not political stuff. (COCA)
- b. Thus, argue others, tampering with this collective heritage “is a question of respect for human dignity from which all human rights derive,” and that “if there are any human rights at all, then there is a human right not to have the necessary conditions for *the having of such rights altered*.” (COCA)

Thus, while verbal gerunds are clearly more frequent with *having* and *doing* than nominal gerunds, these verbs will not show up in the results of the distinctive collexeme analysis. Furthermore, because I excluded verbal *-ing* forms followed by complementizers such as *that* or *whether*, verbal gerunds which derive from a verb like *say* will be less frequent in this dataset than they are in the whole class of verbal gerunds. More specifically, verbal gerunds as in (264a) were included in the dataset because they allow grammatical alternation with nominal gerunds, while the one in (264b) was not.

- (264) a. I just like *saying that name*. (COCA)
- b. (. . .) or a lot of them I think it's more that they like the life, they like *saying that's what they are, a writer*. (COCA)

Finally, as is the case for all nominal gerund instances in this study, lexicalized *-ing* forms such as Fonteyn's example of *building* (in the sense of "a structure with a roof and walls") were excluded from the dataset and were not used as input for the analysis.

In sum, the distinctive collexeme analysis will identify those base verbs which are attracted to nominal gerunds as opposed to verbal gerunds and vice versa in cases where both constructions should allow for grammatical alternation. It will not, in other words, identify verbs which are significantly attracted to the nominal and verbal gerund classes as a whole.<sup>42</sup>

Table 23 lists the base verbs which are distinctive for nominal vs. verbal gerund constructions and which were attested more than two times in the datasets. There appears to be a clear divide between both gerund types when it comes to base verbs: of all the verbs that served as input for the collexeme analysis, only 14.43% are shared between nominal and verbal gerunds. There are a number of factors that can constrain the selection of base verbs, the most prominent one being competition from other nominalization strategies. Figure 24 illustrates the proportion of distinctive lexemes with nominal vs. verbal gerunds which have a derivational alternative (e.g. *creating-creation*, *hunting-hunt*). As can be seen in Figure 24, nominal gerunds display significantly less lexical overlap with other types of nominalizations than verbal gerunds do. Nominal gerunds thus tend to derive from base verbs which do not allow for alternative nominalization strategies, cf. examples (265a–c). Verbal gerunds, on the other hand, do not appear to face competition from other derivational suffixes and thus display quite some lexical overlap with other nominalization patterns, as is illustrated in (266a–c).

- (265) a. The same people who are gathered at Ground Zero to protest *the building of this multifaith center* ( . . . ) are the same people who are protesting the creation of mosques all around the country. (COCA)
- b. Once the legal and technical infrastructures were in place to allow *the monitoring of criminis*, it would be a relatively simple step to extend that monitoring to any person the government considered, for whatever reason, to be "of interest." (COCA)

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<sup>42</sup> Hartmann (2014) presents a slightly adapted version of a simple collexeme analysis which compares the frequencies of word-formation products (e.g. *saying* in verbal gerund constructions) to those of their respective bases (e.g. the verb *say* in all of its non-verbal gerund forms). This method allows us to evaluate whether word formation patterns are associated with particular base verbs in general, rather than in comparison to other word formation patterns.



**Table 23:** Base verbs attracted to nominal vs. verbal gerunds.

Nominal gerund (N = 1204)		Verbal gerund (N = 11,668)	
Colllexeme	Coll. strength	Colllexeme	Coll. strength
killing (54:29)	34.71	using (0:295)	12.85
handling (41:20)	27.31	creating (0:219)	9.51
building (23:0)	23.66	getting (0:171)	7.41
teaching (41:48)	18.65	making (15:461)	7.30
reporting (22:7)	16.71	providing (0:167)	7.23
bombing (16:1)	15.25	finding (0:145)	6.27
sharing (30:32)	14.54	watching (0:130)	5.62
founding (16:3)	13.57	keeping (0:117)	5.06
monitoring (22:15)	13.26	becoming (0:110)	4.75
learning (27:29)	13.09	losing (0:108)	4.67
funding (12:0)	12.32	bringing (0:96)	4.14
training (12:0)	12.32	developing (0:82)	3.54
processing (13:5)	9.61	taking (12:285)	3.52
sinking (10:1)	9.26	putting (0:81)	3.49
opening (22:32)	9.02	understanding (0:79)	3.41
functioning (9:1)	8.27	maintaining (0:77)	3.32
licensing (8:0)	8.21	reducing (0:77)	3.32
manufacturing (8:0)	8.21	addressing (0:76)	3.28
testing (16:18)	7.81	assessing (0:71)	3.06
burning (12:9)	7.20	giving (0:64)	2.76
healing (7:0)	7.18	implementing (0:63)	2.71
tracking (7:0)	7.18	establishing (0:60)	2.58
unfolding (7:0)	7.18	identifying (0:56)	2.41
printing (6:0)	6.15	conducting (0:55)	2.37
awarding (9:5)	6.12	evaluating (0:55)	2.37
labeling (8:3)	6.10	achieving (0:53)	2.28
restructuring (8:3)	6.10	allowing (0:53)	2.28
signing (10:8)	5.93	raising (1:73)	2.25
rebuilding (9:6)	5.76	determining (0:52)	2.24
dismantling (7:3)	5.21	removing (0:52)	2.24
kidnapping (5:0)	5.12	sending (0:51)	2.20
marketing (5:0)	5.12	preventing (0:50)	2.15
trafficking (5:1)	4.38	integrating (0:49)	2.11
financing (7:6)	4.17	increasing (0:48)	2.07
airing (4:0)	4.10	extending (0:47)	2.02
blurring (4:0)	4.10	reaching (0:47)	2.02
bootlegging (4:0)	4.10	selecting (0:45)	1.94
downgrading (4:0)	4.10	avoiding (0:44)	1.89
unveiling (4:0)	4.10	treating (0:44)	1.89
firing (7:7)	3.90	winning (0:41)	1.76

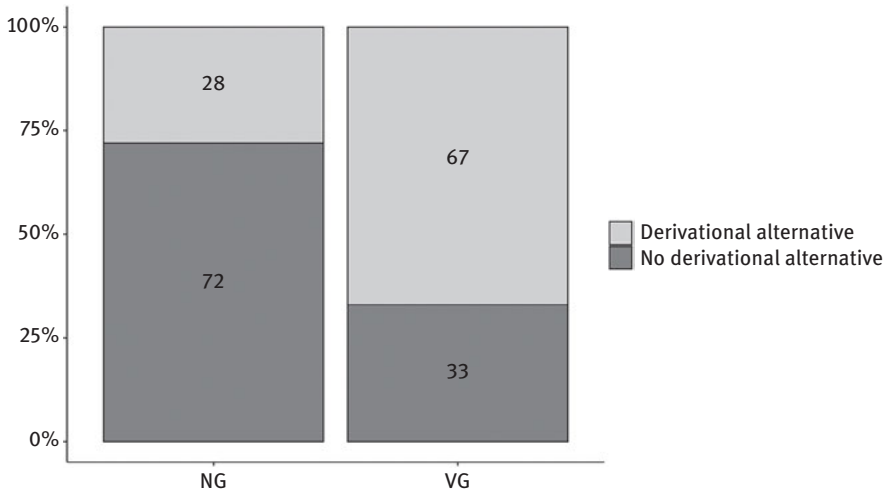
Table 23 (continued)

Nominal gerund (N = 1204)		Verbal gerund (N = 11,668)	
Collexeme	Coll. strength	Collexeme	Coll. strength
closing (13:33)	3.63	attending (0:40)	1.72
hiring (11:25)	3.48	meeting (0:40)	1.72
modeling (7:10)	3.26	improving (1:58)	1.69
shooting (7:10)	3.26	adding (0:39)	1.68
breeding (3:0)	3.07	helping (0:39)	1.68
commissioning (3:0)	3.07	delivering (0:37)	1.59
flourishing (3:0)	3.07	obtaining (1:55)	1.57
hunting (3:0)	3.07	seeing (1:55)	1.57
jailing (3:0)	3.07	applying (0:35)	1.50
lynching (3:0)	3.07	collecting (0:35)	1.50
remaking (3:0)	3.07	calling (0:34)	1.46
smuggling (3:0)	3.07	preparing (0:34)	1.46
underreporting (3:0)	3.07	studying (0:34)	1.46
sampling (4:2)	2.99	designing (0:32)	1.37
trading (4:2)	2.99	promoting (0:32)	1.37
lifting (6:10)	2.61	saying (0:31)	1.33
aging (3:1)	2.50	securing (0:31)	1.33
deepening (3:1)	2.50		
exporting (3:1)	2.50		
filming (3:1)	2.50		
heightening (3:1)	2.50		
vetting (3:1)	2.50		
wearing (13:47)	2.46		
arming (4:4)	2.39		
blending (3:2)	2.13		
recycling (3:2)	2.13		
planning (6:14)	2.07		

- c. The new agreement outlines a series of recommendations, norms, oversight procedures, and governance arrangements to facilitate *the sharing of influenza virus samples with human pandemic potential*. (COCA)

(266) a. (. . .) it is an ideal model for *assessing the impact of loss of strength on speech behaviors*. (COCA) [assessment]

- b. This end state is a large, specialized research center, school, or department that has out-competed other entities for the purpose of *implementing large-scale research projects*. (COCA) [implementation]



**Figure 24:** Lexical overlap between lexemes attracted to NGs vs. VGs and other nominalization strategies.

- c. (. . .) indeed, the process of *selecting the next prime minister, the next government and the other leadership* will be a smooth one. (COCA) [selection]

When we have a closer look at the types of verbs attracted to nominal and verbal gerunds, we can identify two categories that are distinctive for each gerund type. For verbal gerunds, this is a group of verbs which have been labelled “light verbs” (Jespersen 1965: 117). Light verbs can be broadly defined as “verbs with very general meanings” (Goldberg 2009: 202) which typically occur in so-called “light verb constructions”, i.e. verb-complement pairs such as “take a bath” in which the verb itself has little lexical meaning and most of the construction’s meaning is obtained from the complement, typically an event nominal (Wittenberg 2014; Butt 2010; Huddleston and Pullum 2002: 290–296). Classic light verbs include highly frequent and polysemous lexemes such as *do*, *get*, *give*, *have*, *make*, *put* and *take*. Because of their frequency and polysemy, the meanings of these verbs “often depend heavily on the nouns with which they co-occur” (Fellbaum 1998: 84). Each of these classic light verbs (with the exception of *do* and *have*, which did not occur in the original input, cf. *supra*) are present in the list of lexemes distinctively associated with verbal gerunds. Interestingly, this observation seems to support the conclusions drawn from previous functional analyses, viz. that verbal gerunds

more actively rely on their participants to receive meaning, e.g. through the mechanism of subject control.

A class of verbs that frequently occurs in nominal gerund constructions are verbs displaying lexical ergativity, whereby “the subject of the intransitive and the object of the transitive have the same lexical content or refer to the same entities” (Davidse 1998: 96). A typical example is given in (267), where we see that the object of the transitive construction with *break* is the same as the subject of intransitive *break*:

- (267) a. He broke the vase.  
b. The vase broke.

Ergative verbs which are distinctively attracted to nominal gerunds include verbs like *healing*, *deepening*, *closing*, *sinking* and *burning*. Thus, in example (268), the participant in the *of*-phrase can be interpreted as either the subject of the verb (“the mansion burned”) or its object (“X burned the mansion”).

- (268) Conspiracy theories about *the burning of the mansion* are especially popular. (COCA)

The presence of ergative verbs with nominal gerunds can be motivated in two ways. On the one hand, most of the verbs mentioned above have no other derivational alternative (with the exceptions of *closing*–*closure*, *downgrading*–*downgrade*, *blending*–*blend*), which explains why they are attracted to nominal gerund constructions. On the other hand, ergative patterns are known to be strongly correlated with process nominalizations in general (Koptjevskaja-Tamm 1993; Alexiadou 2001: 168; Salanova 2007: 51; De Smet 2007: 82–83), because they mark the subject of intransitive verbs (“S-arguments”) and the objects of transitive verbs (“O-arguments”) in the same way, viz. by means of an *of*-genitive. The subjects of transitive constructions (“A-arguments”), on the other hand, are typically introduced by the preposition *by*:<sup>43</sup>

- (269) a. *The coming of new life* was consoling. (COCA) [Intransitive – subject in *of*-phrase]

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<sup>43</sup> An exception to this rule is posed by double possessives such as “Japan’s jailing of the fishing boat captain” (COCA), where the agent is marked by another type of genitive, viz. the Saxon s-genitive, rather than being realized by a prepositional phrase (Salanova 2007: 52–53).

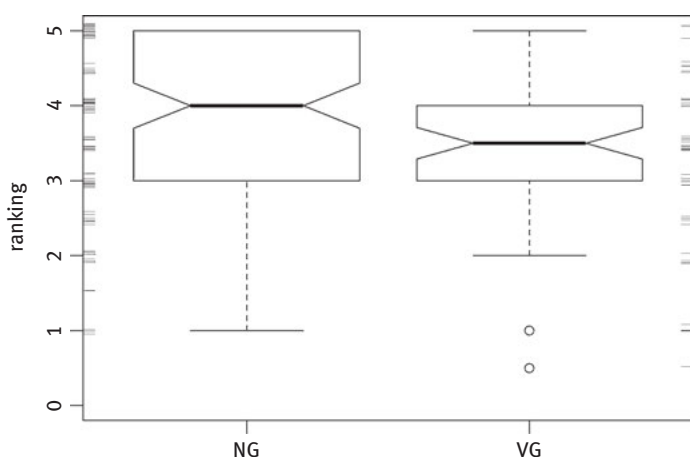
- b. He has overseen *the killing of Osama bin Laden*. (COCA) [Transitive – object in *of*-phrase]
- c. (. . .) *the killing of the Jews by the Nazis* (. . .). (COCA) [Transitive – object in *of*-phrase and agent in *by*-phrase]

Verbal gerunds, on the other hand, follow the regular accusative patterning, whereby S-arguments align with A-arguments (both carrying either genitive case marking, e.g. *my seeing him*; *his arriving*, or oblique marking, e.g. *me seeing him*; *him arriving*, and preceding the verb), as opposed to the O-arguments, which maintain their original sentential marking (accusative or unmarked, e.g. *seeing him*; *seeing John*) and always follow the verb. Consequently, verbal gerund constructions do not permit the type of ambiguity found with the nominal gerund in example (270), but obligatorily assign an argument role to their participants:

- (270) The pollen or smoke from *burning the wood and leaves* could slip into the lungs, searing with agony. (COCA) [the wood and leaves = necessarily O-argument; vs. *the burning of the wood and leaves*: ambiguity between O-argument and A-argument]

A final way of looking at the types of verbs attracted to nominal and verbal gerund constructions is by assessing their “degree of transitivity”. Because nominalizations typically do not inherit all the arguments of the original predicate, processes of nominalization have been associated with a reduction in (actual) valency (Mackenzie 1985). This is true for a majority of nominal gerunds, which frequently leave out the subject argument and substitute it with (definite) determiners. Verbal gerunds, on the other hand, more readily recover the subject argument through matrix clause control. According to Mackenzie (1986: 12–13), the valency or “transitivity” reduction associated with nominalizations also explains why we are less likely to find a construction like “John’s loving of a secretary” than “John’s hitting of the ball”. While in the latter example, he argues, there is “a decent amount of transitivity there for the nominalization process to reduce”, verbs like *love*, which have an inherently low transitivity, tend to “nominalize with relative difficulty” (Mackenzie 1986: 12). In order to assess whether nominal gerunds tend to attract verbs which are inherently more transitive than verbal gerunds, I analyzed the list of significantly attracted lexemes according to a number “transitivity parameters” as proposed in Hopper and Thompson (1980). Transitivity, they argue, not only entails the presence of an object argument, but involves various components which have to do with the effectiveness with which the transfer from agent to patient takes place. I selected the five parameters which could most easily be applied to the lexemes, viz.

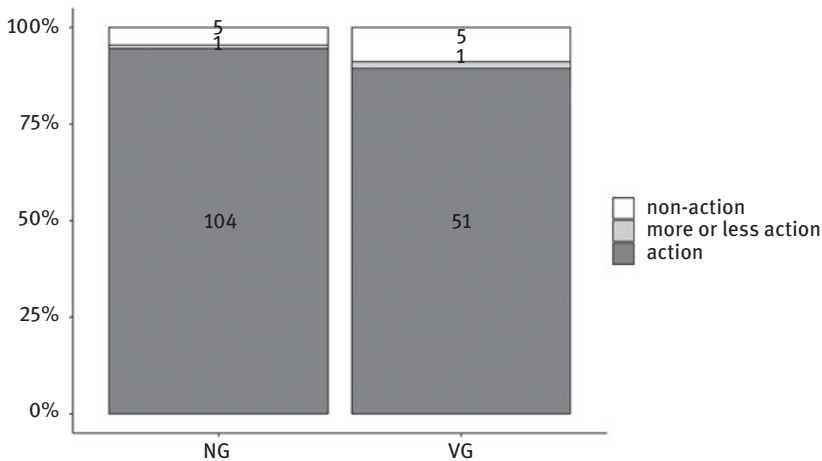
Kinesis (the construction denotes an action or a non-action, e.g. *I hugged Sally* vs. *I like Sally*), Aspect (the construction is telic or atelic, e.g. *He ate the bagel* vs. *He wore a hat*), Punctuality (the construction is punctual vs. non-punctual, e.g. *She broke the vase* vs. *She wrote the book*), Volitionality (the agent acts purposefully or not, e.g. *I searched my keys* vs. *I lost my keys*) and Affectedness of Object (the patient argument is affected or not, e.g. *He kidnapped him* vs. *He watched him*).<sup>44</sup> Based on these five parameters, I ranked the lexemes in the output file on a scale from high to low transitivity. Thus, the base verb *kill* with nominal gerunds and *create* with verbal gerunds both score a 5 on the transitivity scale, since they prototypically conceptualize telic and punctual actions with volitional agents and affected objects. Verbs like *see* and *monitor*, on the other hand, score lower on the transitivity scale, as they are typically atelic, involve less action and have unaffected objects. The transitivity rankings with nominal and verbal gerunds are visualized in the boxplot in Figure 25:



**Figure 25:** Boxplot of transitivity scores with nominal and verbal gerunds (0 = low transitivity, 5 = high transitivity).

<sup>44</sup> The fact that I could only analyze lexemes and not the constructions as a whole has some shortcomings: I could not, for instance, account for the effect of arguments on the aspectual status of the situation (cf. the difference between the atelic situation *the closing of factories* and the telic situation *the closing of the factory*). Thus, for all lexemes, I analyzed the situation as if it would occur with a single countable object (e.g. *lifting* as telic and punctual, as in *the lifting of the ban*).

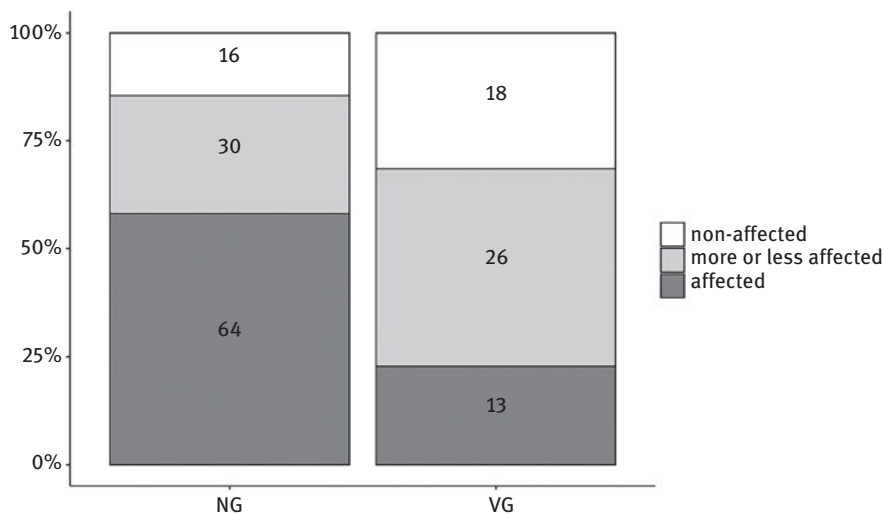
Overall, the lexemes attracted to both nominal and verbal gerunds score relatively high on the transitivity scale, but a *U*-test indicates that the median ranking of nominal gerund base verbs (4, interquartile range=1.875) is significantly different from that of verbal gerund base verbs (3.5, interquartile range=1) ( $W=3994$ ,  $p=0.0003$ ). When we look at the transitivity parameters separately, we find that the lexemes attracted to nominal and verbal gerunds differ especially with regard to the Kinesis and Affected Object components (see Figures 26 and 27): base verbs attracted to verbal gerunds conceptualize non-actions relatively more often (e.g. *watching*, *understanding*), while the actions expressed by nominal gerund base verbs more often involve affected objects (e.g. *fracturing*, *beating*).



**Figure 26:** The parameter of Kinesis with NG and VG base verbs.

**Note:** The label “more or less action” was applied to the lexeme *underreporting*, which is neither stative nor entirely dynamic, and *getting*, which is polysemous and can be either a non-action (*he got the flue*) or an action (*he got the medal*).

In sum, nominal and verbal gerunds significantly differ with regard to the types of verbs they combine with. While nominal gerunds clearly position themselves within a broader network of deverbal nominalizations, as can be witnessed by the lack of lexical overlap with other nominalization strategies, verbal gerunds do not engage in competition with other word formation patterns. Secondly, nominal gerunds distinguish themselves from verbal gerunds through their attraction of verbs with ergative patterning, while verbal gerunds more readily combine with semantically underspecified light verbs. This semantic underspecification ties in



**Figure 27:** The parameter of Affectedness with NG and VG base verbs.

The label “more or less affected” was applied to lexemes which affect their objects in some way, but not completely, such as *identifying* or *carrying*.

with the observation that verbal gerund base verbs – in comparison to those found with nominal gerunds – tend to score lower on a scale of transitivity, while base verbs attracted to nominal gerunds more often conceptualize actions with affected objects, resulting in a higher ranking on a scale of transitivity.

## 7.8 Conclusion

This chapter set out to further investigate the semantics of the English gerund by means of collocational analyses. On the one hand, it aimed to reassess two semantic labels that have often been attributed to gerunds, viz. those of action and fact. On the other, it wished to complement more functionally-oriented referential studies with a thorough distributional analysis. This was realized by means of a distinctive collexeme analysis, which first looked at the types of predicates and head nouns that combine with one gerund type as opposed to the other. My analysis showed that there is overall little overlap between the distributional preferences of nominal and verbal gerunds, confirming that both gerund constructions have a fundamentally different semantic profile. Secondly, it pointed out that the action-fact dichotomy fails to capture the semantic distinction between nominal and verbal gerunds. With both predicates and head nouns, I discerned a vast



array of semantic subtypes which illustrated that the distinction between actions and facts is often irrelevant. As for the matrix clause predicates, the main distinctions between nominal and verbal gerunds were especially concerned with different control behavior and a different temporal orientation: there is no subject coreferentiality with nominal gerunds vs. subject or object control with verbal gerunds, and nominal gerunds prefer same-time or backward-referring predicates, while verbal gerunds display no clear preference for a particular temporal orientation. In noun complement constructions, as well, nominal and verbal gerunds were shown to combine with a broad range of head nouns, including factual, modal, circumstantial, eventive and mental uses. While the majority of nouns attracted to nominal gerunds fell into the factual class, verbal gerunds turned out to combine with circumstantial, modal as well as mental nouns. With regard to temporal orientation, it was observed that nominal gerunds more often occur in existentially presupposed contexts, whereas verbal gerunds exhibit a preference for virtual space-building nouns. On a more structural level, I found that nominal gerunds are more frequent in non-appositional structures, while verbal gerunds show a tendency towards appositional uses.

These observations, I showed, complement the nominal and verbal gerund's respective referential and aspectual profiles, as described in Chapters 4 and 5. The referential analysis centered on two notions, viz. conceptual (in)dependence and existential status. From a distributional perspective, the notion of conceptual (in)dependence is reflected in the typical control relations established by the predicates that are attracted to nominal and verbal gerunds as well as the degree of conceptual overlap between the noun and its complement in (non-)appositional structures. With regard to these two features, nominal gerunds clearly emerge as the conceptually independent form, while verbal gerunds display more conceptually dependent traits. The gerund's existential status, on the other hand, goes hand in hand with the temporal orientation of the predicate or head noun it combines with. As such, nominal gerunds were shown to prefer same-time and especially backward-referring contexts, which is in accordance with their existentially presupposed status as well as their preference for aspectually bounded situations. Verbal gerunds exhibited more flexibility on the existential level, often combining with lexemes that build virtual (i.e. future, hypothetical or counterfactual) spaces.

Finally, nominal and verbal gerunds not only differ in their external distribution, but also in the types of verbs they typically derive from. Nominal gerunds, facing competition from other nominalization strategies, derive from a more restrictive set of verbs than verbal gerunds and are thus more constrained in their selection of base verbs. On a semantic level, then, we can draw parallels between the verbs distinctively associated with nominal and verbal gerunds and the

referential profiles of both gerund types, which centered on the distinction between conceptually dependent verbal gerunds and conceptually independent nominal gerunds. It was shown that verbal gerunds not only rely on matrix clause participants to receive referential grounding, but also more readily attract semantically underspecified verbs which obtain their meaning from the arguments they combine with. The base verbs attracted to nominal gerunds, on the other hand, tend to be semantically richer and already – independently – provide quite some information about the situation conceptualized by the gerund.

## 8 Gradience and variation in the gerund system

The preceding analyses have allowed us to paint a clearer picture of the functional properties that typify nominal and verbal gerund constructions in general. It has in addition been shown that the macro-level functional dimensions of reference and aspect are also manifested at the token-level, in the specific lexemes attracted by nominal and verbal gerunds. The present chapter is concerned with the mid-level organizational structure of the gerund system, demonstrating how we can gain more insight into the gradience and variation between nominal and verbal gerunds by means of statistical analyses. More specifically, I wish to (i) shed more light on the (hierarchical) structure of the gerund system, identifying clusters of features that are unique to either nominal or verbal gerunds, as well as zones of overlap between them and (ii) explain the observed variation between nominal and verbal gerunds by determining which factors most prominently influence the speaker's choice for a particular gerund type. I will do so by bringing together the various formal and functional parameters discussed so far and incorporating them into two statistical models, viz. a hierarchical classes analysis (De Boeck and Rosenberg 1988) and a logistic regression model.

### 8.1 Data

The referential and aspectual analyses in part II were carried out on sets of nominal and verbal gerunds representing the entire, non-sampled range of gerund types. This chapter, however, draws on tokens that can – in theory – be expressed by either a nominal or verbal gerund construction. In line with standard procedures, I have decided to consider a token as interchangeable if it is *grammatically possible* to use the alternative variant, rather than *acceptable* or *likely*. Concretely, this means that the statistical analyses in this chapter were carried out on the same set of nominal gerunds used in Part II, but on a more restricted set of verbal gerunds. Examples (271a–g) illustrate some of the verbal gerunds that were excluded from the original dataset because grammatical alternation with a nominal gerund form with *of*-phrase was not possible. This includes the potentially ambiguous verbal gerunds which were discussed in Chapter 3 (example [271a]), as well as verbal gerunds with a prepositional object (271b). I furthermore excluded ditransitive constructions such as the ones in (271c) and (271d) and verbal gerunds with *being* and *having*, as illustrated in (271e). Finally, I omitted a number of verbal gerunds with complement clauses, as in example (271f), and idiomatic phrases

such as *taking care* in example (271g). Overall, about 50% of the original dataset of verbal gerunds was replaced by instances which do allow for alternation.

- (271) a. *Travelling in queues* reduces the drag of the water on any one individual, except for the leader. (BNC)
- b. The awkwardness will probably prompt you to talk just for the sake of *filling in the space*, and you may say more than you wanted to or even find yourself talking rubbish. (BNC)
- c. Alternatively the tenant's adviser could amend the timetable by *requiring the landlord to apply to the President and pay any requisite fee within the prescribed period*. (BNC, academic)
- d. Should I be concerned about *getting my tap water tested*? (COCA)
- e. Bain & Co.'s forecast of a 40 million-subscriber, \$6 billion ITV market in 2002 is predicated on *the service being available by subscription for no more than \$15 a month*. (COCA)
- f. Both the 1981 and 1985 documents went further in *claiming that in his human consciousness Jesus was aware of his personal preexistence as Son of God*. (COCA)
- g. These men had great misgivings about John's many women, his babies, and his cavalier attitude toward *taking care of them*. (COCA)

The decision not to exclude any nominal gerunds is motivated by the fact that, theoretically, all nominal gerund structures also allow for a verbal gerund alternate. I thereby did not take into account the types of determination the nominal gerund occurred with (e.g. definite article vs. indefinite article vs. demonstrative), even though this is a distinction that is not encoded with verbal gerunds.

Of course, we need to keep in mind that the grammatical possibility of alternation does not entail that the alternative variant is commonly acceptable or likely to occur. Consider, for instance, the nominal and verbal gerund in (272) and (273). Both instances can, in theory, be construed as a verbal and nominal gerund respectively, but these alternate constructions do not sound quite natural to the speaker. In (272), it is especially the combination of the main verb *bring about* and the verbal gerund *shaming the offender* that seems unlikely, while in example (273), a construction with the Romance derived noun *exploration* would sound more natural than the nominal gerund (*an/the*) *exploring of the properties*.

- (272) He claims successful societal responses to crime are those which bring about *the reintegrative shaming of the offender*. (BNC)

(273) Mr. Adams stressed the importance of *exploring the properties intrinsic to photography* (. . .). (COCA)

Thus, even with grammatically alternating tokens, there is still often no real competition between nominal and verbal gerunds. Indeed, as was shown in Chapter 7, nominal and verbal gerunds clearly have particular contextual and lexical preferences. As opposed to the criterion of grammaticality, however, the likelihood or acceptability of an alternation is difficult to measure objectively and thus difficult to apply in the selection of data for the hierarchical classes and binary logistic regression analysis.<sup>45</sup>

Like the rest of the dataset, then, the extra instances of verbal gerunds serving as replacements for the non-alternating verbal gerunds were coded for the various formal and functional parameters discussed in the previous chapters. Overall, the following features were discerned:

- REFERENCE TYPE: specific, non-specific, generic, non-referential, ambiguous
- MENTAL SPACE: actual, virtual, generic, non-referential
- CONTROL: subject, object, other matrix clause element, internal, no control
- ONTOLOGICAL ASPECT: state, activity, accomplishment, achievement/semelfactive
- REPETITIVENESS: single, repetitive, iterative
- BOUNDEDNESS: bounded, unbounded, ambiguous, neutral
- CLAUSAL FUNCTION: subject, direct object, prepositional object, postmodifier/complement, adjunct, other
- COMPLEXITY: simple, complex

To check whether it makes a difference using the grammatically alternating instances as input for the statistical analyses instead of the original dataset, I compared the results obtained from the original set of verbal gerunds and the “alternating” set. A chi-square test showed that the frequencies of the two sets differ significantly for six of the parameters mentioned above. With three of those,

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<sup>45</sup> A way of controlling for “categorical behavior” is to exclude contexts that are found with less than 5 percent or more than 95 percent of a particular variant (Jankowski and Tagliamonte 2014: 311). In the case of the genitive alternation, for instance, proper name possessors overwhelmingly occur with the *s*-genitive and are thus typically excluded in variation analyses (Jankowski and Tagliamonte 2014: 311). However, this method was not applied to the data under investigation, as it would require checking each token individually, both on a lexical level (“how often does it occur as a nominal/verbal gerund with this particular reading?”) and a contextual level (“how often does a nominal/verbal gerund combine with this predicate/preposition etc.?”).

the effect sizes are marginal: “alternating” verbal gerunds are more often non-specific than the original verbal gerunds ( $p=0.0004$ ,  $\phi=0.07$ ), are less often controlled by an internal controller (e.g. *the possibility of his wife’s falling in love*) ( $p=0.03$ ,  $\phi=0.05$ ) and more often conceptualize accomplishments ( $p=0.003$ ,  $\phi=0.07$ ). They are furthermore viewed more often from an ambiguous (bounded/unbounded) viewpoint ( $p=0.0001$ ,  $\phi=0.1$ ), represent states less often ( $p<0.0001$ ,  $\phi=0.1$ ) and more often have a simple internal syntax ( $p<0.0001$ ,  $\phi=0.14$ ). Some significant differences can be easily explained. Because the alternating verbal gerunds necessarily take a direct object, which often add telicity to the situation, it is not surprising that we find more accomplishments with them. The exclusion of the verb *being* moreover means that we are less likely to find states in the second dataset. And while the original dataset had a separate category of “simple with preposition” instances, i.e. instances without direct object but with maximally one additional adjunct (*working from home*), and contained instances with *that*-clause objects or ditransitive syntax, the second dataset did not, resulting in a higher number of instances with simple internal syntax. Overall, however, we can conclude that the dataset used in this chapter does not fundamentally from the one used in Chapters 4 and 5.

## 8.2 Hierarchical classes analysis

### 8.2.1 Background

A first type of statistical analysis that was carried out is a hierarchical classes analysis (HICLAS), a clustering procedure developed by De Boeck and Rosenberg (1988) that is primarily used to describe the set-theoretical structure of a set of objects by means of a number of attributes (De Boeck, Rosenberg and Van Mechelen 1993). HICLAS has mainly been adopted within the domains of psychology and psychiatry, where it is typically used to identify symptom classes associated with particular clusters of patients. As opposed to other clustering techniques which have been applied in the field of linguistics, such as hierarchical agglomerative cluster analysis (Divjak and Gries 2006), HICLAS models can represent clustering in both the rows and columns of the co-occurrence matrix (Gara et al. 1998). Similar to a method like Hierarchical Configurational Frequency Analysis (HCFA; Gries 2008: 249f, as cited in Hilpert 2009), HICLAS identifies significant configurations of attributes in a dataset. In addition, however, HICLAS also explicitly visualizes the superset-subset relations between both the attributes and the cases they describe. Hence, it is argued that applying this type of

analysis can be of added value to the study of constructional configurations in the gerund system.<sup>46</sup>

The input for a HICLAS analysis is a binary object-by-attribute matrix, as in Table 24 below:

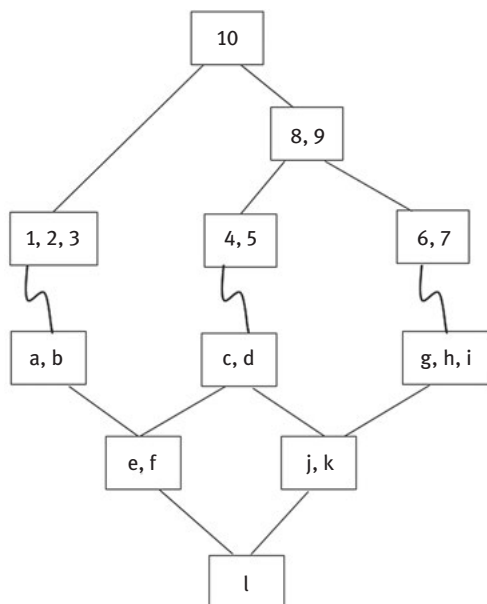
**Table 24:** Example of an object-by-attribute matrix (taken from De Boeck, Rosenberg and Van Mechelen 1993: 266).

Objects	Attributes											
	a	b	c	d	e	f	g	h	i	j	k	l
1	1	1	0	0	1	1	0	0	0	0	0	1
2	1	1	0	0	1	1	0	0	0	0	0	1
3	1	1	0	0	1	1	0	0	0	0	0	1
4	0	0	1	1	1	1	0	0	0	1	1	1
5	0	0	1	1	1	1	0	0	0	1	1	1
6	0	0	0	0	0	0	1	1	1	1	1	1
7	0	0	0	0	0	0	1	1	1	1	1	1
8	0	0	1	1	1	1	1	1	1	1	1	1
9	0	0	1	1	1	1	1	1	1	1	1	1
10	1	1	0	0	0	0	1	1	1	1	1	1

In this example matrix, ten objects are described by twelve attributes, which are represented by 0 ('attribute does not apply') or 1 ('attribute applies'). If objects can be described by the same set of attributes, as is the case for 1, 2 and 3 in Table 24, for instance, they are said to form an object class. The same goes for attributes: if two or more attributes apply to the same set of objects, they are grouped together in an attribute class. The attributes a and b, for instance, both apply to objects 1, 2, 3 and 10. What characterizes the HICLAS model is its recognition of superset-subset relations between classes of objects and attributes. Thus, we can see in Table 24 that the attributes of the object class [6, 7] represent a subset of the attribute set of object class [8,9]. The attributes of object 10, then, form a superset of all the other attribute sets. By outlining these superset-subset relations, the model is able to visualize the data as a *hierarchical* structure. This is illustrated in Figure 28, which is a graphic representation of the example matrix in Table 24:

We can interpret this figure as follows: the bottom object classes [1, 2, 3], [4, 5] and [6, 7] are each associated with one *bundle* of attributes, respectively

<sup>46</sup> See, however, Maekelberghe (2018) for an application of HCFA to this dataset.



**Figure 28:** Graphic representation of example matrix (taken from De Boeck, Rosenberg and Van Mechelen 1993: 268).

[a, b, e, f, l], [c, d, e, f, j, k, l] and [g, h, i, j, k, l]. Because object class [8, 9] is superordinate to both [4, 5] and [6, 7], it belongs to *two* bundles, viz. [c, d, e, f, j, k, l] and [g, h, i, j, k, l]. It thus shares the attributes of object classes [4, 5] and [6, 7]. Object class [10], then, can be described by the same set of attributes of [8, 9], *and* those of object class [1, 2, 3]. As such, object class [10] belongs to three bundles of attributes. In the lower half of Figure 28, we see that attribute classes are also structured hierarchically. Thus, while attributes [g, h, i] only apply to one object class, viz. [6, 7], attribute [l] applies to all of them, and can, therefore, be considered as a general feature characteristic of all the objects in the set.

Let us now look at how this model can be applied to the set of gerunds. The 1,600 instances of nominal and verbal gerunds served as the objects in the input matrix. The parameters they were annotated for, then, functioned as their attributes. In order to keep the model and its visualization fairly simple and interpretable, I only used the parameters which were in previous chapters proven to be significantly different with nominal and verbal gerunds. I moreover collapsed some of the levels of the variables. This resulted in the following list of attributes:

- MENTAL SPACE: actual, virtual, other



- CONTROL: controlled (by matrix clause element), uncontrolled (by matrix clause element)<sup>47</sup>
- REPETITIVENESS: single, repetitive<sup>48</sup>
- BOUNDEDNESS: bounded, unbounded, unmarked
- CLAUSAL FUNCTION: core clausal function, peripheral clausal function<sup>49</sup>

A brief illustration of the input matrix is given in Table 25:

Before submitting the data to the HICLAS analysis, one first has to choose the maximum number of bundles or “ranks” that will be discerned by the model. Generally, the more object and attribute bundles (i.e. unions of objects or attributes which share characteristics) are derived, the higher the goodness-of-fit index will be. The goodness-of-fit index given by the HICLAS analysis is the Jaccard coefficient of similarity, which is calculated by dividing the number of true positives by the sum of false positives, false negatives and true positives (De Boeck, Rosenberg and Van Mechelen 1993: 275).

For the analysis of nominal and verbal gerunds, I chose a maximum rank of six bundles. After running the algorithm, I checked which rank (from 1 to 6) provided the best trade-off between goodness-of-fit and simplicity. The goodness-of-fit values for each rank were 0.43, 0.58, 0.62, 0.67, 0.71 and 0.77 respectively. While the output with six bundles resulted in the best goodness-of-fit index, the visualization it offered was highly complex and difficult to interpret. I thus chose rank 4, with a goodness-of-fit of 0.67, as the most optimal number of bundles for the analysis of my dataset.

### 8.2.2 Results

Figure 29 shows the HICLAS structure produced by the algorithm in rank 4. The upper half of the figure displays the hierarchical structure of the seven

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<sup>47</sup> The uncontrolled category includes both instances without control and instances with an internal controller, as in (a)–(c):

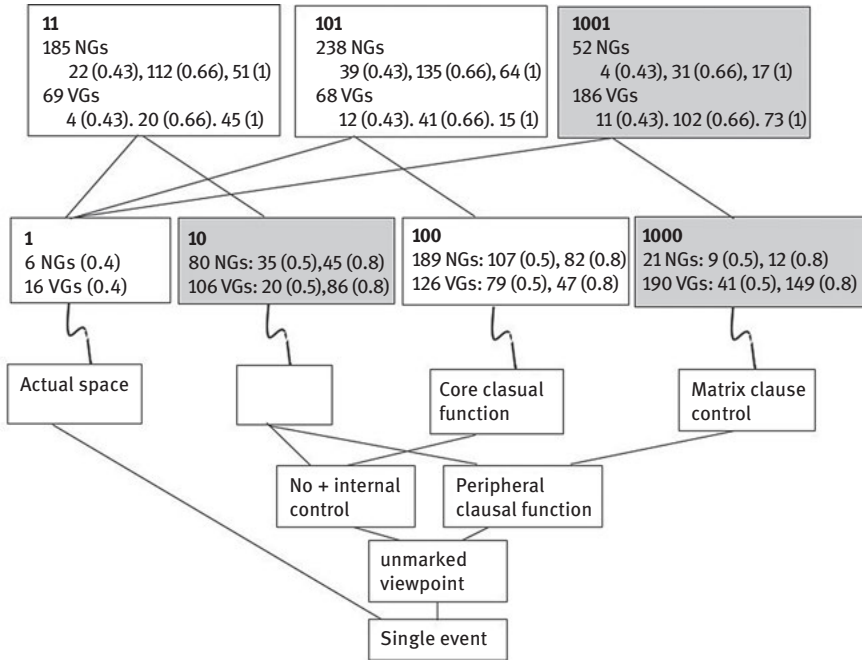
- (a) *A car hitting the side of a land rover*
- (b) *The opening of the door*
- (c) *His running of the business*

<sup>48</sup> The repetitive category includes both repetitive and iterative instances.

<sup>49</sup> Among the core clausal functions we find subjects, direct objects, prepositional objects, subject complements and there-existentials. The remaining functions, viz. adjuncts, postmodifiers and extraposed objects, were classified as peripheral.

Table 25: Illustration of the input data for the HiCLAS analysis.

actual	virtual	other space	control	no control	single	repetitive	bounded	unbounded	unmarked viewpoint	core	peripheral
1	1	0	0	1	1	0	0	0	1	1	0
2	1	0	0	1	0	1	0	0	1	1	0
3	0	1	0	1	1	0	0	0	1	1	0
4	0	1	0	1	0	1	1	0	0	1	0
5	1	0	1	0	1	0	0	0	1	0	1
6	1	0	1	0	1	0	0	1	0	0	1
7	0	0	1	0	1	0	0	0	1	0	1
8	0	1	0	1	1	0	0	0	1	1	0
9	0	1	0	1	1	0	0	0	1	1	0
10	1	0	1	0	1	0	0	0	1	0	1



**Figure 29:** Graphic representation of HICLAS structure for nominal and verbal gerunds.

object classes. For each object class, I have listed how many nominal and verbal gerunds were grouped together, including their respective goodness-of-fit values. In object class 10, for instance, there are 80 nominal gerunds, of which 35 instances have a goodness-of-fit of 0.5 and 45 instances a value of 0.8.<sup>50</sup> The object class also contains 106 verbal gerunds, of which 20 instances score 0.5 and a majority of 86 instances have 0.8 goodness-of-fit. Object classes containing a majority of verbal gerunds were marked in light grey, while those with a majority of nominal gerunds were left transparent.

It should be noted that not all the attributes from the input file figure in the output provided by the model. More specifically, the functional parameters of boundedness, unboundedness, repetitiveness, virtual space and other space were not included in the visualization. Most likely, the gerunds that were coded for these parameters did not have enough attestations and, hence, the attributes could not be used to successfully describe and structure the objects. Furthermore,

<sup>50</sup> The numbers on top of each object class are generated by the algorithm.

the attribute class which is linked to object class 10 is empty, since the model did not detect any attributes that were unique to that object class. Finally, there are a total number of 68 instances (29 nominal gerunds and 39 verbal gerunds) which could not be fitted into the structure.

I will first provide a step-by-step discussion of the model, after which I will show how the results bear on some of the observations made in previous chapters and further our understanding of gradience within the gerund system. First, as the model was produced for rank 4, we can discern four object and attribute bundles in the graphic representation. The four object bundles are represented by the four bottom object classes and the superordinate object classes they are linked to, viz. [1, 11, 101, 1001], [10, 11], [100, 101] and [1000, 1001]. Each of these object bundles is associated with an attribute bundle, connected to the bottom object classes by the zigzag line. Thus, for each object bundle, these are the respective attribute bundles:

- Object/attribute bundle 1:  
[1, 11, 101, 1001] → [actual space, single event]
- Object/attribute bundle 2:  
[10, 11] → [no+internal control, peripheral clausal function, unmarked viewpoint, single event]
- Object/attribute bundle 3:  
[100, 101] → [no+internal control, core clausal function, unmarked viewpoint, single event]
- Object/attribute bundle 4:  
[1000, 1001] → [matrix clause control, peripheral clausal function, unmarked viewpoint, single event]

In the upper part of Figure 29, we find three superordinate object classes, which are part of two object bundles. Concretely, object classes 11, 101 and 1001 have the characteristics of object bundles 2, 3 and 4 respectively, but can also be described by the attribute actual space, which is an attribute unique to object bundle 1.

As can be observed, object class 1 represents a small group of 22 gerund instances which can only be described by the features actual space and single event and which have quite a low goodness-of-fit score (0.4). The remaining six object classes, however, are more interesting. Three of them (100, 101 and 11) have a majority of nominal gerunds, while the other three (10, 1000, 1001) contain more verbal gerunds. The object classes with a majority of nominal gerunds all share one characteristic, viz. the absence of matrix clause control. Almost 30% of all nominal gerunds are found in object class 101, sharing the features of actual space, no or internal control, core clausal function, unmarked viewpoint and single event. Since the latter two attributes apply to almost all object classes,

nominal and verbal gerunds alike (unmarked viewpoint is not linked to the small group of gerunds in object class 1), it can be argued that the features most characteristic of nominal gerunds are those of actual space, no or internal control and core clausal function. Another 47% of nominal gerunds is grouped together in object classes 100 and 11: both share the features of no or internal control, unmarked viewpoint and single event, but the former lacks the attribute of actual space, while the latter object class is described by the attribute of peripheral clausal function instead of core clausal function.

Object classes which mainly contain verbal gerunds, on the other hand, all share the feature of peripheral clausal function. Most verbal gerunds are found in object class 1000, which is described by the attributes matrix clause control, peripheral clausal function, unmarked viewpoint and single event, and in object class 1001, which has the additional feature of actual space. It appears, then, that the attributes matrix clause control and peripheral clausal function are most typical of verbal gerunds.

Overall, nominal gerunds are quite infrequent in the object classes associated with verbal gerunds. The same does not hold for verbal gerunds, however. Although object classes 1000 and 1001 together already account for 47% of all verbal gerunds, there also quite a number of verbal gerunds which belong to object classes with a more balanced mix between nominal and verbal gerunds. Object classes 10 and 100, for instance, account for another 37% of verbal gerunds. Both classes share the attribute of no or internal control, but object class 10 – which has slightly more verbal gerunds – is linked to peripheral clausal functions, while object class 100 – with more nominal gerunds – is linked to core clausal functions. The verbal gerunds in these classes, then, distinguish themselves from those discussed above in that they lack matrix clause control. Interestingly, among these verbal gerunds, we find a significant overrepresentation of *generic* instances.<sup>51</sup> The analysis thus once again confirms that it is especially generic verbal gerunds that share characteristics with nominal gerunds and are grouped together with them accordingly.

### 8.2.3 Gradience in the gerund system

What are the implications of the HICLAS analysis for our understanding of the relation between nominal and verbal gerunds, and how does it help us detect

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<sup>51</sup> In the set of 800 verbal gerunds, 131 instances are generic. 41 out of 106 instances are generic in object class 10 ( $p < 0.0001$ ,  $\varphi = 0.18$ ) and 36 out of 126 are generic in object class 100 ( $p = 0.0001$ ,  $\varphi = 0.10$ ).

gradience within the gerund system? First, the results discussed above show that the category of nominal gerunds can be described quite uniformly: most of them are associated with the attributes of no or internal control, core clausal function and actual space, with the addition of a number of instances which either did not occur in actual space or which had a peripheral instead of a core clausal function. Thus, instances (274a-c), which had a goodness-of-fit of 1 in object class 101, can be considered prototypical nominal gerund instances, while the examples in (275a-b) and (276a-b), which have a goodness-of-fit score of 1 in classes 100 and 11, are slightly less prototypical.

- (274) a. *The abrupt ending of the contact*, therefore, seems to have reflected the policeman's sensitivity to the girl's feelings and a general sympathy towards her welfare (. . .). (BNC) [no control, subject, actual]  
 b. And like Nardi, he recognizes *the media's sensationalizing of the "darker side" of Samoa*. (COCA) [internal control, direct object, actual]  
 c. They were received like lifesaving heroes, Russian troops arriving among the Bosnian Serbs to supervise the withdrawal and *monitoring of heavy weapons*. (COCA) [no control, direct object, actual]
- (275) a. It will prevent *the taking of prompt action to improve failing schools*. (BNC) [no control, direct object, virtual]  
 b. *A heightening of the students' sense of political awareness* was to be avoided. (BNC) [internal control, subject, virtual]
- (276) a. Nor is the public education system historically the product of an act of nationalisation: it is the slow outcome of *the fostering of voluntary, as well as the planting of state, establishments*. (BNC) [no control, complement, actual]  
 b. We'll also continue our series on the business of lobbying, a look at the rising influence of special interest groups on *the making of law*. (COCA) [no control, complement, actual]

The class of verbal gerunds, on the other hand, has been shown to be more heterogeneous. The attributes most central to a majority of verbal gerunds were matrix clause control and peripheral clausal function, as in examples (277a-c). The second-most frequent verbal gerund object class adds the attribute of actual space, as in (278a-b), though it should be noted that, in contrast to nominal gerunds, a majority of verbal gerunds are not linked to the attribute of actual space. In addition, the model also classifies a significant number of verbal gerunds into object classes associated with nominal gerund attributes, such as core clausal

function and, especially, no or internal control. Among these “noun-like” uses, we find many generic verbal gerunds, as in (279a-b), but also verbal gerunds with an explicit subject, as in (280), and other non-controlled instances, as in (281).

- (277) a. Far from valuing the individual, I believe the Tory government has privatised people’s souls by *eroding self respect* (sic) *and well-being*. (BNC) [subject control, adjunct]  
 b. In my view we are facing the task of *completely revising the way we look at unemployment*. (COCA) [subject control, complement]  
 c. He will begin a Third Experience class by *describing something he saw on the way to class—a pickpocketing on the bus*—or by asking a student to describe the weather. [matrix clause control, adjunct]
- (278) a. Meanwhile Mr Lamont came under attack for *spending the whole of August away from his desk*. (BNC) [subject control, adjunct, actual]  
 b. To be sure, small private enterprises share the blame for *polluting the environment*. (COCA) [subject control, adjunct, actual space]
- (279) a. *Offering the right kind of help where it is needed* requires a comprehensive assessment scheme. (BNC) [no control, subject, generic]  
 b. It is in this sense that statistics may be an elaborate way of *demonstrating the obvious*. (BNC) [no control, complement, generic]
- (280) *A car hitting the side of the Land Rover* would probably crush the fuel tank and spill petrol, creating an explosion risk. (BNC) [internal control, subject]
- (281) Adult education classes can increase skills in subjects like photograph, badminton, or a language, often leading to *joining a club or group devoted to that interest*. (BNC) [no control, prepositional object]

Finally, there are also a number of verbal gerunds with a goodness-of-fit score of 0.8 or 1 which occur in object classes with a clear majority of nominal gerunds, and vice versa. The verbal gerund in (282b), for instance, has a goodness-of-fit value of 1 in object class 101, which consists of 77% nominal gerunds and has as its core attributes no or internal control, core clausal function and actual space.

- (282) a. Because the accounts are to do with *measuring economic activity rather than the timing of receipts and payments*. (BNC) [no control, prepositional object, actual space]

- b. In Malawi *opposing the president* and advocating multi-party democracy is considered sedition. (BNC) [no control, subject, actual space]

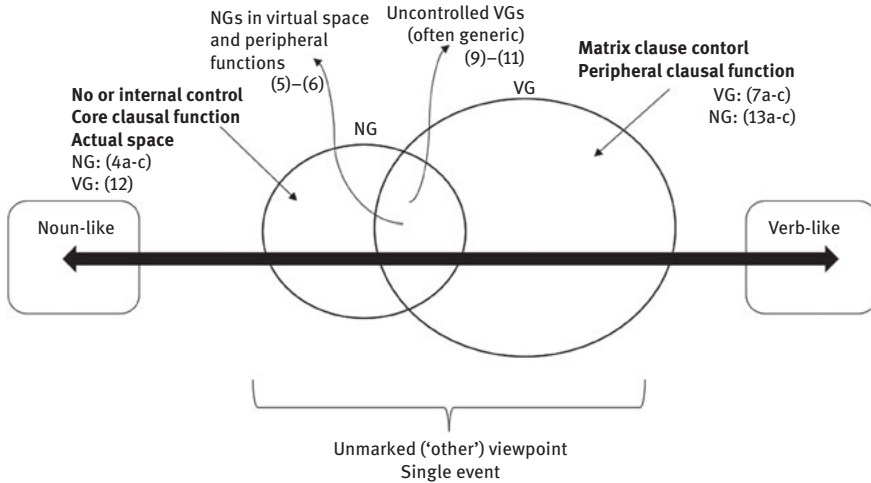
The same holds for a number of nominal gerunds which occur in the clearly “verbal” object class 1000 (matrix clause control, peripheral clausal function):

- (283) a. Our desire can be for physical satisfaction, for wealth, power or the need for recognition, for satisfying the intellect or our heart, or simply for *the seeking of pleasure*. (BNC) [indirect control through *our*, complement]  
 b. We screech to a halt near the top, for *the loading of passengers into the cars below us*. (COCA) [subject control, adjunct]  
 c. The new law of prohibition of alcohol afforded them marvellous matter for *the pleading of the liberty of men and women against the tyranny of majorities*, and they sang or preached several eloquent perorations in praise of freedom. (BNC) [object control, postmodifier]

The results are synthesized in Figure 30, which offers a schematic representation of the gradient structure of the gerund system. The core attributes or features associated with prototypical nominal and verbal gerunds are indicated in bold. Instances which do not entirely conform to these prototypes are placed at the intersection between nominal and verbal gerunds. For nominal gerunds, this includes instances which have a more peripheral clausal function and/or are situated in virtual space. However, these instances still largely conform to the nominal gerund paradigm. Verbal gerunds located in the overlap zone are often generic and thus more resembling of nominal constructions, as noted in Chapter 4.

When visualizing gradience between nominal and verbal gerunds, it is important to remark that verbal gerunds are by far the most common gerund type, which evidently influences the gradient structure of the gerund system. While many verbal gerunds take more “nominal” attributes such as lack of matrix clause control and core clausal functions, the opposite is not the case: most nominal gerunds are situated in nominal gerund-dominated object classes. While nominal gerunds in verbal gerund object classes, such as examples (283a-c), can quite readily be replaced by verbal gerunds (e.g. *seeking pleasure*, *loading passengers*, *pleading the liberty*), the “nouny” verbal gerunds, as in (279)–(282), do not necessarily sound better when replaced by a nominal gerund. In Figure 30, then, it can be observed that verbal gerunds regularly infiltrate the nominal domain, while nominal gerunds occupy only a small portion of verbal gerund uses.





**Figure 30:** Gradience in the gerund system.

## 8.3 Binary logistic regression analysis

### 8.3.1 Background

A second statistical technique used in this chapter is a binary logistic regression analysis. Regression analyses are typically employed to discern relationships among variables and to predict the outcome of a particular dependent variable given a number of independent or predictor variables. In the domain of linguistics, binary logistic regression lends itself well to studying linguistic phenomena which entail a binary choice, such as the genitive alternation ('s-genitive vs. *of*-genitive) or, in this case, the gerund alternation (nominal gerund vs. verbal gerund). The underlying question behind a binary logistic regression analysis of such grammatical phenomena is "what motivates speakers to produce one variant instead of the other" (Hilpert 2013: 45). Not only can the regression analysis discern which variables influence the speaker's choice, it also indicates which of those variables have the strongest effect and it identifies possible interactions between the predictor variables.

The logistic regression model was estimated on the same set of 1,600 "grammatically alternating" nominal and verbal gerunds that were submitted to the HICLAS analysis. The dependent variable is the outcome of a nominal

gerund.<sup>52</sup> As predictors, I included the following independent variables, again collapsing a number of levels with some predictors:

- REFERENCE TYPE: specific, non-referential, generic+non-specific, ambiguous
- MENTAL SPACE: actual, virtual, other space (= generic+non-referential)
- CONTROL: yes (= control by matrix clause element), no (= no control or internal control)
- ONTOLOGICAL ASPECT: state, non-state
- REPETITIVENESS: single, repetitive
- VIEWPOINT ASPECT: bounded, unbounded, ambiguous, neutral
- COMPLEXITY: simple, complex
- CLAUSAL FUNCTION: core, peripheral
- GENRE: spoken, fiction, newspaper, magazine, academic, nonacademic, miscellaneous
- CORPUS: BNC, COCA

In addition to the functional parameters that were discussed in the previous chapters and the syntactic parameter of clausal function, I also added genre and corpus as predictors to the model. According to Declerck (1991: 498), nominal gerunds are typical of an “official, written style”. Likewise, Spencer (2006: 85) argues that *-ing* nominalizations with a definite article “have a rather archaic feel to them”. Yet, these claims have not been backed up by corpus-based analysis. Overall, there are seven genres in the dataset, although the genres “nonacademic” and “miscellaneous” only occur in BNC. As noted in Chapter 3, COCA has an even distribution of five genres (20% each), while BNC has a smaller proportion of spoken data (10%), newspapers (10.8%) and magazines (7.5%) and a larger number of academic (15.9%), fictional (16.5%), nonacademic (17.1%) and miscellaneous (21.6%) texts. Table 26 shows the distribution of nominal and verbal gerunds over these genres:

The variable corpus was originally intended as a random effect; however, a comparison of baseline models with fixed intercept and random intercept showed no significant improvement in fit.<sup>53</sup> Therefore, I built a regression model with fixed effects only, discerning both main effects and interaction effects.

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<sup>52</sup> Since nominal gerunds are the smallest category of gerunds in Present-day English while verbal gerunds are typically considered the “default” option, it would be more interesting to find out which factors increase the probability of having a nominal gerund rather than a verbal gerund.

<sup>53</sup> More specifically, the AIC and BIC values of the fixed intercept model were 2220 and 2225 respectively, while the random intercept model had AIC and BIC values of 2222 and 2232 respectively.

**Table 26:** Genre distribution of nominal and verbal gerunds.

Genre	Nominal gerund		Verbal gerund	
	n	%	n	%
Academic	257	32%	225	28%
Fiction	86	11%	71	9%
Magazine	88	11%	98	12%
Miscellaneous	99	12%	127	16%
Newspaper	116	15%	138	17%
Nonacademic	108	13%	63	8%
Spoken	46	6%	78	10%
<b>Total</b>	<b>800</b>	<b>100%</b>	<b>800</b>	<b>100%</b>

### 8.3.2 Results

Table 27 presents the regression model, which reports on the odds ratios associated with each predictor variable and the overall explanatory power of the model. The model includes all predictor variables as fixed effects and one interaction effect between the variables control and mental space.<sup>54</sup> The multicollinearity diagnostics revealed no problematic correlation between the predictor variables, the maximum VIF (‘Variable Inflation Factor’) score being 3.1 for the “generic+non-specific” level of the variable Reference type.<sup>55</sup> The C-statistic (or “concordance” statistic) measures the predictive efficiency of the model: the closer it is to 1, the more accurate the model is in predicting actual outcomes (Hinrichs and Szmrecsanyi 2007: 459, Rosemeyer 2014: 134). Nagelkerke’s  $R^2$ , on the other hand, measures the proportion of variance that is predictable from the independent variables (Hinrichs and Szmrecsanyi 2007: 460). As can be seen, the model accurately predicts almost 85% of all 1,600 outcomes in the

<sup>54</sup> This model displayed significant improvement in overall fit in comparison to (i) models which excluded the variables corpus, ontological and complexity ( $p < 0.0001$ ), and (ii) models without interaction effects ( $p = 0.005$ ). The AIC or “Akaike Information Criteria” index, which is a measure for the trade-off between model accuracy and simplicity and thus penalizes the inclusion of additional variables, was somewhat higher in these simpler models, however (1592 for the model without interaction effects, 1616 for the model without the variables corpus, ontological and complexity).

<sup>55</sup> This may be due to the correlation between generic reference on the one hand, and generic mental spaces on the other. In order to minimize this correlation, generic reference was grouped together with non-specific reference, while generic mental spaces are placed in the “other space” category together with non-referential mental spaces.

**Table 27:** Binary logistic regression model measuring the probability of the occurrence of a nominal gerund.**Logistic regression model**

glm(formula = type ~ reference.type + control + mental.space + ontological + viewpoint + repetitive + cl.function + complexity + genre + corpus + control:mental.space, family = "binomial", data = regression.set)

**Model evaluation**

C-index: 0.8494

Somer's  $D_{xy}$ : 0.696

Nagelkerke's  $R^2$ : 0.461

AIC: 1586

Predictor	Level	Odds ratio	95% C.I.	p-value	
	(Intercept)	13.19	8.09–21.84	< 0.0001	***
REFERENCE TYPE	generic+nonspecific	Reference level			
	ambiguous	0.82	0.52–1.28	0.37	
	non-referential	4.33	1.83–11.25	0.001	**
	specific	1.41	1.02–1.97	0.036	**
MENTAL SPACE	actual	Reference level			
	virtual	0.34	0.23–0.49	< 0.0001	***
	other space	0.43	0.27–0.69	0.0004	***
CONTROL	no	Reference level			
	yes	0.07	0.05–0.10	< 0.0001	***
ONTOLOGICAL ASPECT	non.state	Reference level			
	state	0.36	0.14–0.90	0.032	*
VIEWPOINT ASPECT	neutral	Reference level			
	ambiguous	0.09	0.01–0.39	0.004	**
	bounded	2.40	1.52–3.83	0.0001	***
	unbounded	1.30	0.88–1.94	0.18	
REPETITIVENESS	repetitive	Reference level			
	single	0.33	0.24–0.43	< 0.0001	***
CLAUSAL FUNCTION	core	Reference level			
	peripheral	0.37	0.29–0.48	< 0.0001	***
COMPLEXITY	complex	Reference level			
	simple	1.27	0.99–1.64	0.063	.
GENRE	academic	Reference level			
	fiction	1.26	0.79–2.07	0.32	

**Table 27** (continued)

	magazine	0.77	0.51–1.21	0.28	
	miscellaneous	0.58	0.37–0.90	0.014	*
	newspaper	0.87	0.59–1.29	0.49	
	nonacademic	1.50	0.93–2.46	0.099	.
	spoken	0.53	0.31–0.88	0.014	*
CORPUS	BNC	Reference level	0.63–1.19	0.39	
	COCA	0.87			
CONTROL: MENTAL SPACE	other space:	3.64	1.51–8.44	0.003	**
	control ‘yes’				
	virtual space:	1.90	1.08–3.36	0.026	*
	control ‘yes’				

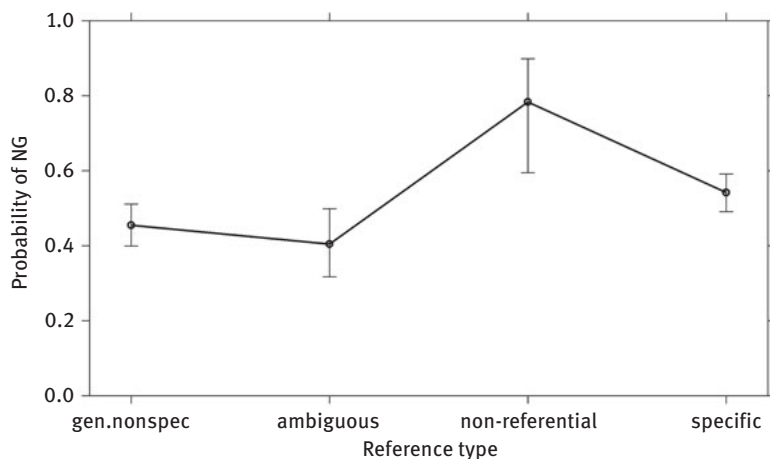
**Significance codes:** 0 ‘\*\*\*’ / 0.001 ‘\*\*’ / 0.01 ‘\*’ / 0.05 ‘.’

dataset and accounts for approximately 46% of the variance in the dependent variable gerund type.<sup>56</sup> The odds ratio indicates how the presence of a predictor variable (e.g. matrix clause control) influences the odds of having a verbal gerund. Odds ratios larger than 1 indicate that a nominal gerund is favored, while values approximating zero suggest that a nominal gerund will be disfavored. The p-values in the final column show whether or not the predictor variable is significant.

Based on Table 27, we can discern a number of significant tendencies. Two reference types serve as significant predictors, viz. non-referential and specific: both increase the odds of having a nominal gerund. This can also be observed in the effect plot in Figure 31.<sup>57</sup> As noted in Chapters 4 and 6, non-referentiality arises when the gerund occurs in the subject complement slot of a copular clause (e.g. *It was a bursting of the bubble*), and is a feature that is more commonly associated with (indefinite) nominal gerunds. It should be observed, however, that the confidence intervals for non-referential are quite wide, which may be due to the overall infrequency of non-referential instances in the dataset.

<sup>56</sup> Note, however, that a low  $R^2$  value does not necessarily mean that the model is inadequate. Especially in domains dealing with human behavior such as psychology or language use, which are often hard to predict,  $R^2$  values will typically be low. In this case, it means that the other 55% of variance can be explained by other functional-semantic features that were not considered in this study, lexical preferences, contextual preferences, non-semantic features or free variation.

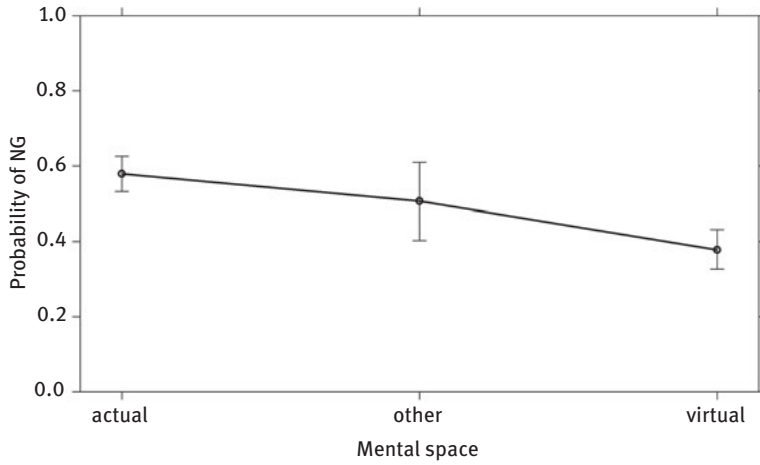
<sup>57</sup> All effect plots are based on the probability of a nominal gerund as outcome.



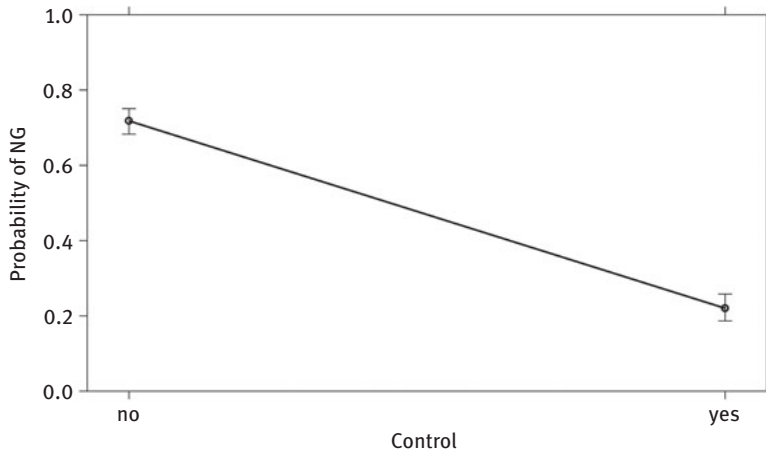
**Figure 31:** Reference type.

Secondly, both virtual and other (i.e. generic and non-referential) mental spaces decrease the likelihood of having a nominal gerund (Figure 32). This is in line with the observations drawn from the referential analysis in Chapter 4, which showed that nominal gerunds are accessed less frequently in non-actual spaces than verbal gerunds, and it confirms the existential flexibility of the verbal gerund. A third referential parameter, control, is one of the strongest predictors in the model: when the gerund has matrix clause control, the odds for a nominal gerund decrease almost fifteen times (see Figure 33). A minor effect is found with ontological aspect, where the predictor variable state decreases the odds for a nominal gerund, as illustrated in Figure 34. Note, however, that the overlapping confidence intervals may indicate that this significant effect is invalid.

A somewhat more complicated picture arises with viewpoint aspect, where we find two significant levels, as shown in Figure 35. Ambiguous viewpoint, on the one hand, decreases the odds of a nominal gerund, while bounded viewpoint aspect increases the odds of having a nominal gerund as outcome. Moving on to repetitiveness, we find that single events are likelier to be realized by verbal gerunds. This confirms the results from Chapter 5, which showed that nominal gerunds significantly more often conceptualize repetitive events. The significant effect is visualized in Figure 36. Clausal function is another explanatory factor with significant impact. Peripheral clausal functions, such as adjuncts or post-modifiers, significantly decrease the odds of a nominal gerund (see Figure 37). Clearly, then, the prepositional contexts in which verbal gerunds first emerged (cf. Fanego 2004) are still disfavoured with nominal gerunds.



**Figure 32:** Mental space.



**Figure 33:** Control.

Although the predictor complexity was included in the model, its effect is actually not significant ( $p = 0.06$ ) and will thus not be discussed here. Genre, on the other hand, did have some significant levels. More specifically, spoken and “miscellaneous” genres have a negative influence on the outcome of a nominal

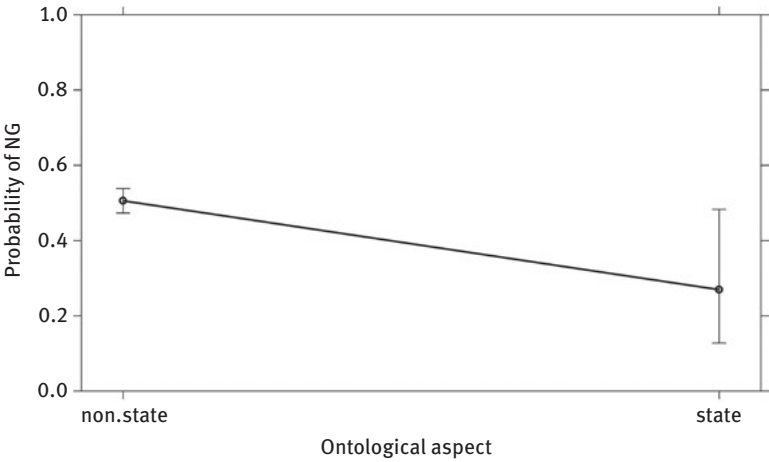


Figure 34: Ontological aspect.

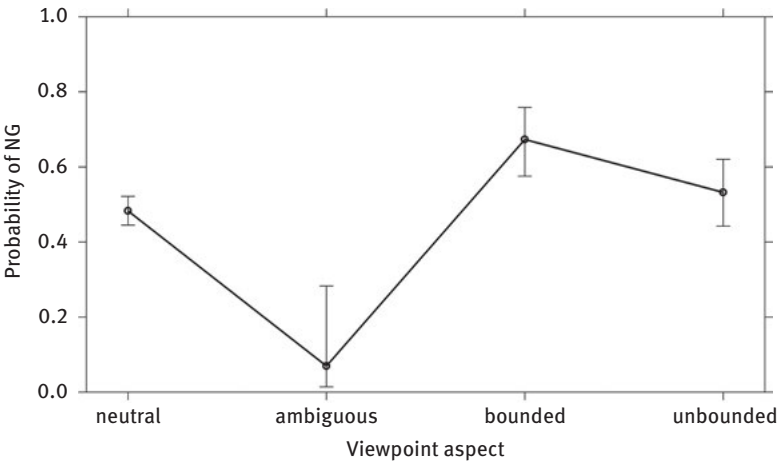
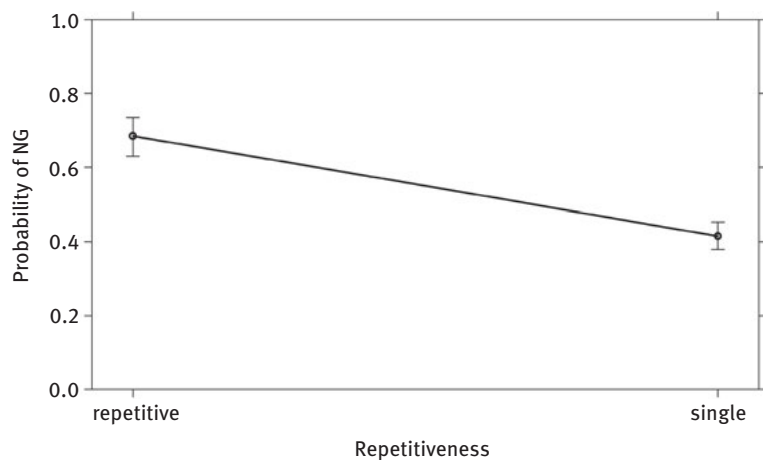


Figure 35: Viewpoint aspect.

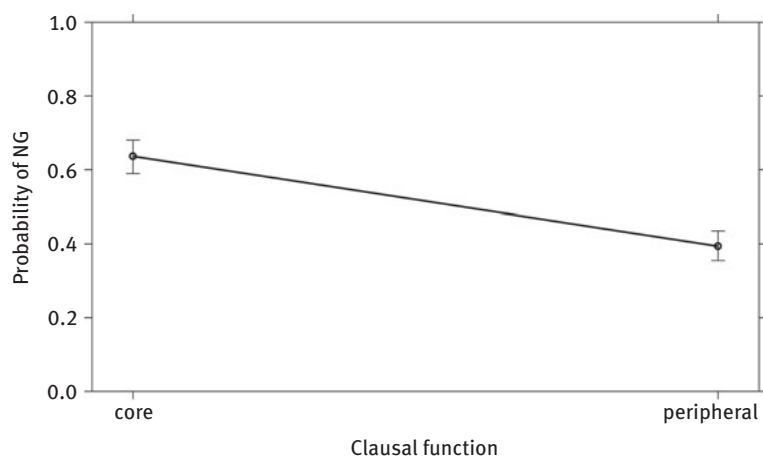
gerund.<sup>58</sup> As can be observed in Figure 38, however, the confidence intervals of these variables partly overlap, which may suggest that the significant effects are not entirely valid.

<sup>58</sup> As noted in Chapter 3, miscellaneous texts include biographies, emails, instructions etc., while nonacademic texts mainly consist of prose on topics like arts, engineering or medicine.



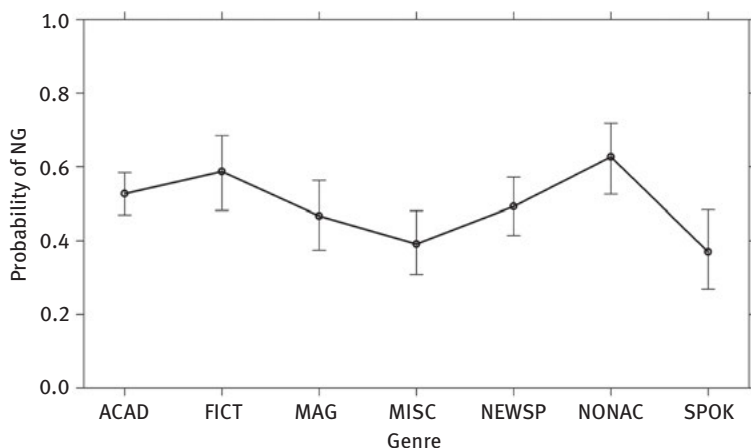


**Figure 36:** Repetitiveness.



**Figure 37:** Clausal function.

The model also included one interaction effect between mental space and control. In the left hand panel of Figure 39, we can see that lack of matrix clause control usually increases the likelihood of having a nominal gerund, but that this effect is especially significant when the gerund is accessed in actual space, and

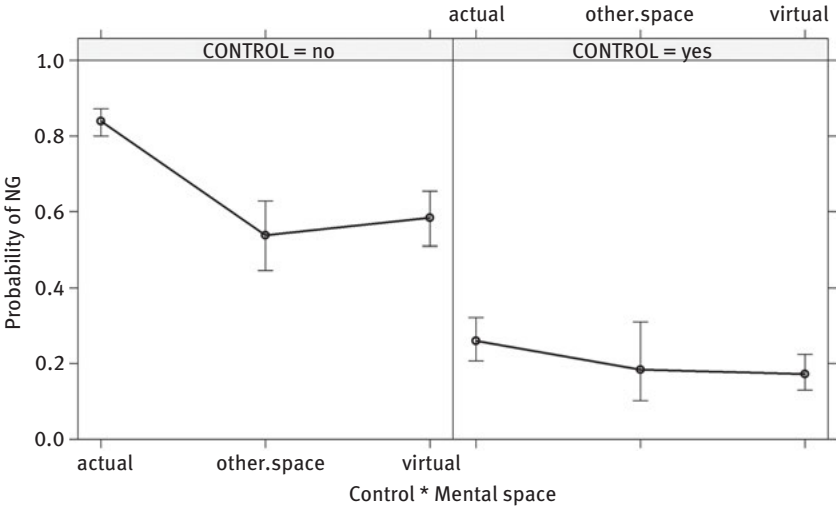


**Figure 38:** Genre.

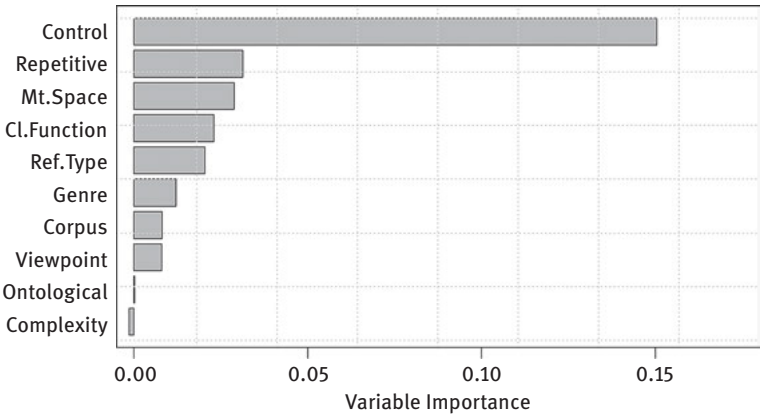
less so in other and virtual mental space. This is probably due to the fact that generic verbal gerunds, which are located in “other” mental spaces, are often uncontrolled. Consequently, the absence of matrix clause control is less significantly associated with nominal gerunds in these mental spaces. As shown on the right hand side of Figure 39, the negative influence of matrix clause control on the occurrence of a nominal gerund is slightly stronger in virtual mental spaces (the effect of “other space” may not be valid due to its wide confidence intervals). Indeed, while 75% of controlled gerunds in actual space are verbal gerunds, this percentage increases to 83% in virtual space.

In a final step, I also conducted a random forest analysis (Tagliamonte and Baayen 2012), a statistical technique which assesses the usefulness of each predictor by setting up multiple conditional inference trees (hence “random forest”) and which outputs a variable importance measure for each predictor variable. The variable importance of the predictors used in the regression model are plotted in Figure 40. Clearly, the factor control is by far the strongest predictor of the model and heavily influences the classification accuracy of the conditional inference trees.<sup>59</sup> It is followed at a large distance by repetitiveness, mental space, clausal function, reference type, genre and viewpoint. Interestingly, the random

<sup>59</sup> Indeed, a regression model which only includes control as predictor variable already succeeds in accurately predicting 74% of the actual outcomes ( $C = 0.742$ ,  $AIC = 1818$ ).



**Figure 39:** Interaction effect between control and mental space.



**Figure 40:** Variable importance of predictor variables.

forest analysis, as opposed to the regression analysis, indicates that the predictor variable corpus (i.e. BNC vs. COCA) has a significant impact as well. The factors ontological aspect and complexity fall behind the significance limit of 0.05 and thus appear to have no significant effect on the correct classification of nominal and verbal gerunds.

### 8.3.3 Variation in the gerund system

Based on the numbers presented above, we can assume that the regression model does a good job at explaining the variation between nominal and verbal gerunds in my dataset. Most of the parameters that were discerned in Part II proved to be significant factors in the model, with the presence or absence of matrix clause control being the strongest predictor for a verbal or nominal gerund respectively. We might ask ourselves, however, if the model accurately captures speakers' intuitions about the choice between nominal and verbal gerunds. In order to answer that question, I had a closer look at the probabilities assigned by the regression model to each instance in the dataset. Let us start with "false negatives" or Type II errors, i.e. cases where nominal gerund instances were assigned a low nominal gerund probability score. Examples (284a-c) illustrate three nominal gerunds which the model assigned probability scores of .06, .09 and .09 respectively. In (284a) and (284b), a verbal gerund would indeed seem the default option. Both contexts, however, appear to be quite formal, and the choice for a nominal gerund might be stylistically motivated. As noted in Taylor (1996: 276), using a nominal gerund can have the effect of "delinking (. . .) entities from their natural conceptual partners" and "conceptualiz[ing] something as an autonomous entity". Indeed, although the gerunds in (284) are controlled by the subject of the matrix clause, the nominal gerund construction (and especially the definite article) evokes an impression of conceptual independence, thus adding more emphasis to the event conceptualized by the gerund. The nominal gerund in (284c), on the other hand, does not necessarily sound better as a verbal gerund: the noun "marketing" is more strongly associated with nominal constructions (see Chapter 7) and often occurs with a non-eventive sense.

- (284) a. The new law of prohibition of alcohol afforded them marvellous matter for *the pleading of the liberty of men and women against the tyranny of majorities*, and they sang or preached several eloquent perorations in praise of freedom. (BNC)
- b. Foucault, and those influenced by him, have displayed a great skepticism about the possibilities of a conventional history: Foucault stresses that his work is basically aimed at constructing a 'genealogy', *the locating of the 'traces' of the present* rather than reconstructing the past. (BNC)
- c. (. . .) firms spent tens of thousands of dollars buying whatever equipment, software and on-line services they wanted in order to stay a precious technological step ahead of the competition in *the marketing of such new financial devices as currency futures, swaps and junk bond*. (COCA)

While many of the “false negative” nominal gerunds are indeed interchangeable with a verbal gerund, the same does not always hold for the “false positive” instances or Type I errors, i.e. cases where the predicted outcome was a nominal gerund while the original dataset contained a verbal gerund. According to the predictions of the regression model, the odds of examples (285a-c) containing nominal gerunds are very high (.93, .91, .85). Yet, (285c) is one of the only examples where a nominal gerund might be more appropriate. In other cases, the nominal gerund is blocked because the verbal gerund base verb already has another derivational alternative (*increase*, *examination*).

- (285) a. Dieter Vogel, the German spokesman, said that only the United States and Japan had argued against *increasing the Soviet borrowing quota from the European bank*. (COCA)
- b. In this chapter I discuss what we need to know before we start on our travels, which I call *examining the context of the curriculum* and Malcolm Skilbeck refers to as ‘situational analysis’. (BNC)
- c. *Building the new reactors* is expected to cost about \$1,500 per kilowatt of capacity, compared with \$3,000 or more for the older models. (COCA)

Instances with a probability score between 0.45 and 0.55 are those for which the model could not provide a conclusive prediction and, in theory, this would mean that the outcome could be a nominal as well as a verbal gerund. In total, 98 instances are situated in this “twilight zone”: 44 nominal gerunds and 54 verbal gerunds. Upon closer inspection, however, only 63 of those instances (64%) seem to allow for free variation, while with 35 instances (36%) there is still a clear preference for one particular gerund type. In general, nominal gerunds more readily allow for alternation (35 out of 44 instances, or 80%), while verbal gerunds are less likely to be replaced by a nominal gerund (28 out of 54 instances, or 52%). The results are summarized in Table 28. Illustrations of each category are given in examples (286)–(287):

Variation possible:

- (286) a. *The purchasing of an annuity* may certainly be an excellent idea for some elderly people (. . .). (BNC) [purchasing an annuity]
- b. It will prevent *the taking of prompt action to improve failing schools*. (BNC) [taking prompt action]
- c. I want to be able to be in control of the fears and the anxiety that *watching television today* creates in kids. (COCA) [the watching of television]

- d. This, however, cannot provide a proper long-term basis for *running the club*. (BNC) [the running of the club]

Variation unlikely:

- (287) a. It is the major cost in *maintaining a specialist home*. (BNC)  
b. Faced with the task of *selecting suitable books for physics students* we were pleased to see the presence of several texts that enhance the physics literature at the undergraduate level. (BNC)  
c. Airflow directly over the telescope will keep the telescope at air temperature and eliminate air turbulence in the dome, thus reducing the effects of *atmospheric blurring of images*. (COCA)  
d. The public ceremony, the ritual, *the signing of the contract*, which can speak so powerfully to the inner world of the subjects, is absent. (BNC)

**Table 28:** Nominal and verbal gerunds with a probability score between .45 and .55.

	Nominal gerund	Verbal gerund	Total
Variation possible	35	28	35
Variation unlikely	9	26	48
Total	44	54	98

Again, in those cases where variation is unlikely, the nominal gerund appears to be blocked by other nominalization patterns (*maintenance, selection*) or contextual elements, such as the *horror aequi* effect of the preposition *of* in example (287b). The conceptual independence of the nominal gerunds in (287c) and (287d), and the presence of the classifying adjective *atmospheric* in (287c), appear to reduce the likelihood of a verbal gerund. Interestingly, then, while the constraints on variation with verbal gerunds are often of a lexical or contextual nature, the elements constraining the replacement of a nominal gerund appear to be more functionally motivated.

## 8.4 Conclusion

The present chapter aimed to integrate the observations drawn in Part II of this study into a more probabilistic model of the English gerund, zooming in on gradience and variation between nominal and verbal gerunds. The functional dimensions that were introduced in Chapters 4 and 5, together with a number of

additional parameters, served as input for a Hierarchical Classes analysis and a logistic regression analysis.

By hierarchically structuring the gerunds and the parameters they were coded for into object and attribute classes, the HICLAS analysis already painted a clearer picture of the internal organization of the gerund system. A distinction was made between attributes that were more typical of nominal gerunds, such as no or internal control, a core clausal function and actual mental space, and those that were mostly found with verbal gerunds, viz. matrix clause control and a peripheral clausal function. Gradience, then, arises when certain instances do not correspond to the prototypical attributes of their gerund type, but display a mixture of nominal and verbal attributes. Generic verbal gerunds, for instance, were commonly found in nominal gerund-dominated object classes, while nominal gerunds with a virtual existential status in prepositional slots share a number of features with verbal gerunds.

By fitting a logistic regression model, I assessed how adequate the parameters discerned earlier were at explaining the observed variation between nominal and verbal gerunds. Most of them proved to be relevant predictors, but one factor emerged as the strongest predictor, viz. the presence or absence of matrix clause control. The functional dimension of aspect, on the other hand, appeared to have only a minor effect on the choice between a nominal and a verbal gerund. Overall, the model managed to correctly predict almost 85% of the actual outcomes in the dataset.

Both analyses also showed that there is an uneven balance in the features shared between nominal and verbal gerunds. The HICLAS analysis revealed that while verbal gerunds easily take “nominal” attributes, nominal gerunds are less often found in typically clausal contexts. Likewise, closer investigation of the predictions made by the regression analysis showed that in cases where free variation is in principle possible, it is the nominal gerund which is likelier to be replaced by a verbal gerund. As such, gradience in the gerund system is typically caused by verbal gerunds venturing into the nominal domain, and variation between nominal and verbal gerunds is often unidirectional, with nominal gerunds allowing for substitution by a verbal gerund, but only rarely the other way around.





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## Part IV: **Conclusions**



## 9 Conclusion

This study set out to shed new light on two constructions which, despite sharing a common ancestor and a formal resemblance, are often considered to be two independent, neatly delineated categories of *-ing* forms. Nominal and verbal gerunds seem to have “grown apart”, with the former being associated with other types of deverbal nominalizations and the latter grouped together with clausal structures such as the present participle (Quirk et al. 1985; Huddleston and Pullum 2002). By undertaking a detailed comparative analysis of the two gerund types, I reconsidered the existence of a “gerund system” which encompasses a variety of constructions that range from more nominal to more clausal uses.

While the literature on gerunds is certainly extensive, two main shortcomings were identified which the present study aimed to resolve, viz. the lack of a comprehensive multifunctional perspective that considers the constructions’ functional features as inherently linked to their formal make-up, and the absence of a quantitative, usage-based perspective on the relations between nominal and verbal gerunds in Present-day English. By combining insights from cognitive-functional and constructionist approaches towards grammatical variation, the preceding analyses offered a detailed description of the functioning of nominal and verbal gerunds and identified zones of functional overlap that could serve as the locus of variation between both gerund constructions. In this conclusion, I subsume the findings from these analyses into a holistic functional account of the Present-day English gerund system, investigate the theoretical implications of the present study, and briefly outline a number of questions for future research.

### 9.1 A multi-tiered model of the gerund system

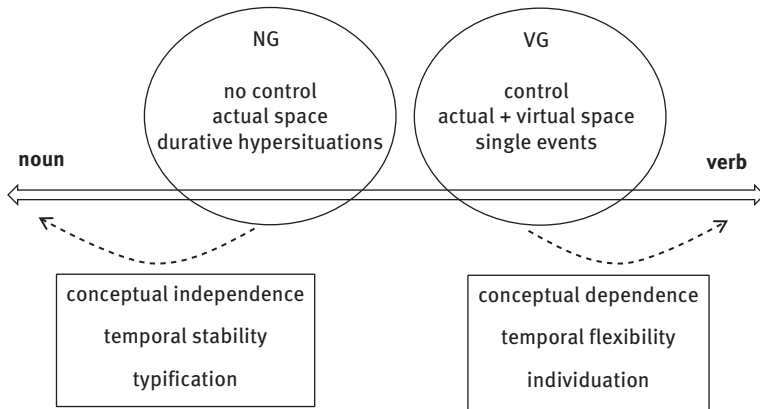
This study put forth a three-tiered comparative description of gerund constructions: (i) a general functional description of nominal and verbal gerunds at macro-level (Chapters 4 to 6), (ii) a first look at gradience and variation between clusters of nominal and verbal gerunds at meso-level (Chapter 8), and (iii) an assessment of the lexical and distributional constraints on variation at micro-level (Chapter 7).

The macro-level, multifunctional description of nominal and verbal gerunds (Chapters 4 and 5) required a theoretical framework that made a comparative analysis of the referential and aspectual features of nominal and verbal gerunds possible. Crucially, the functional parameters thereby had to be described in

such a way that they could pick up on nominal as well as clausal functional traits. I showed, for instance, that prevailing referential models were biased towards prototypical nouns in their close association of specificity with definiteness. The referential framework presented in Chapter 4 teased the two concepts apart and moreover emphasized that gerunds refer to *events*, which are located not only in space but also in time. By adding a level of mental space to the model, I could ascertain whether nominal and verbal gerunds also differ in terms of their existential status. The same holds true for the aspectual analysis in Chapter 5, which took into account that nominal gerunds can make use of more nominal aspectual strategies, such as the use of the indefinite article and adjectival modification.

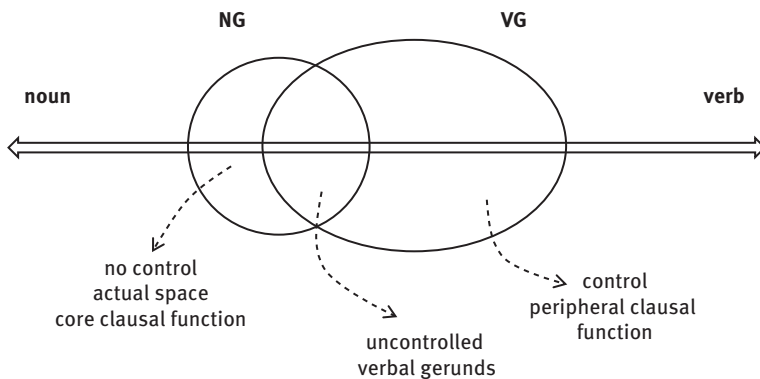
In a next step, the results from the functional analyses were interpreted in light of the categorial status of nominal and verbal gerunds. While both gerund types have often been situated on a formal nouniness cline, the exact functional gradience between both constructions was thus far unclear. Therefore, the functional profiles that emerged from the analyses were linked to the abstract concepts that have figured in the cognitive-functional literature on nouns, verbs and nominalizations, such as conceptual dependence vs. independence, temporal expansiveness vs. discreteness, entities vs. interconnections etc. (see Langacker 1987a, 1987b, 1991, 2008). From this analysis it followed that a notion like conceptual (in)dependence is best operationalized at the referential level, where it is interpreted in terms of the extent to which the gerund depends on matrix clause elements to be referentially anchored. Similarly, the contrast between temporal stability and transience was linked to the different mental spaces in which gerunds were situated. The nominal gerund's preference for actual mental spaces was viewed as symptomatic for the existential presupposedness that is typical of nouns, while the verbal gerund's frequent occurrences in virtual mental spaces were considered as evidence of its existentially flexible or transient status. Another feature claimed to be typical of nominalized constructions is Lehmann's (1988) notion of typification: the more nominal a structure is in terms of its morphosyntax, he argues, the more "typified" the underlying situation will be. To this point, the present study showed that, with gerunds, typification can be understood as the loss of individuation on an aspectual level: while nominal gerunds regularly conceptualize repetitive, durative hypersituations, the situations underlying verbal gerunds more often represent single events. The resulting semantic description at macro-level is illustrated in Figure 41.

The analyses at meso-level, then, further developed the general semantic description in two ways. First, it was examined to what extent nominal and verbal gerunds display overlapping uses, thus giving rise to intra-categorial gradience. This question was addressed by means of a Hierarchical Classes analysis,



**Figure 41:** Semantics of nominal and verbal gerunds at macro-level.

which clustered the instances in my dataset together into classes which almost exclusively contain nominal or verbal gerunds, and classes which comprise a more balanced mix. It was shown that the major zone of overlap between nominal and verbal gerunds is represented by verbal gerunds exhibiting noun-like behavior, most notably when they occur without control relations and refer to generic situations. Nominal gerunds were shown to display clause-like behavior significantly less often. The relation between nominal and verbal gerunds at meso-level is illustrated in Figure 42:



**Figure 42:** Gradience in the gerund system at meso-level.

Secondly, I investigated how successful the functional parameters described at macro-level are at explaining the observed variation between nominal and verbal gerunds. A binary logistic regression analysis demonstrated that the presence or absence of control is the strongest predictor in the choice for a nominal or verbal gerund. Overall, the combination of functional, syntactic and genre factors succeeded in explaining around 85% of the variation between nominal and verbal gerunds in my dataset.

In many cases, however, variation between both gerund types was not just constrained by the parameters discerned in the regression analysis, but by the lexical and contextual factors at micro-level. The collocational analyses conducted in Chapter 7 showed that there is actually very little overlap in the types of contexts that nominal and verbal gerunds occur in, as well as in the types of base verbs they attract. The distributional constraints on nominal and verbal gerunds are often closely intertwined with their distinct functional profiles (e.g. nominal gerunds typically attract “public” predicates, which entail conceptual distance between the subject of the predicate and its object), but may also be morphosyntactically motivated (e.g. nominal gerunds are found less often as prepositional complements to *of*-phrases in order to avoid *horror aequi*). The lexical preferences of nominal and verbal gerunds, on the other hand, turn out to be dependent on the fundamentally different paradigmatic relations of both gerund types. Nominal gerunds, competing with other nominalization patterns, especially attract those verbs which do not have another derivational alternative. This blocking effect is not found with verbal gerunds, which in their turn are paradigmatically related to other non-finite clausal structures, such as participial *-ing* or *to*-infinitives (see, amongst others, De Smet 2010, 2013; Duffley 2014; Fonteyn and van de Pol 2016). In the following section, I consider the broader implications of these results for our understanding of the organization of the Present-day English gerund system and the study of grammatical variation in general.

## 9.2 Theoretical implications

On the basis of current research, we can discern two ways of looking at nominal and verbal gerunds in Present-day English. Firstly, we could consider both constructions as two different realizations of a more abstract gerund type. Studies adhering to this perspective would especially be interested in the formal and/or semantic characteristics that distinguish nominal from verbal gerunds. As mentioned earlier, this approach is often binary in nature: it attempts to describe gerund constructions by attributing a single formal or semantic label to a schematic

gerund type. The second approach, on the other hand, discards the notion of a gerund system and downplays the link between nominal and verbal gerunds. With verbal gerunds dissolving into a larger category of clausal *-ing* forms, unrelated to their nominal counterpart, there seems to be no more need for an overarching “gerund construction” or “gerund constructeme”. This is the perspective that is typically taken in recent reference grammars.

Both perspectives have their benefits and drawbacks. The former approach has given us more insight into the prototypical structure of gerund forms and paved the way for a semantic characterization of *-ing* forms. On the other hand, it tended to brush over other, non-semantic features that might determine the use and interchangeability of nominal and verbal gerunds. The latter approach is more nuanced in this sense, as it acknowledges the diverging “paradigmatic orientation” of nominal and verbal gerunds. Not entirely unjustified, it is pointed out that present-day nominal gerunds share more characteristics with other types of deverbal nominalization, while verbal gerunds are in certain contexts virtually indistinguishable from present participles. At the same time, this approach has ignored the possibility of functional overlap between nominal and verbal gerunds and, hence, of variation between the two gerund types.

This study has demonstrated that both perspectives can be reconciled in a cognitive-constructionist account of Present-day English gerunds. The main benefit of the current theoretical model, it can be argued, is that it allows us to conceive of the gerund system as something that exists at certain levels of abstraction, but is absent at others. As discussed in the previous section, the schematic, overarching gerund construction is most strongly activated at the meso-level, where a particular configuration of features (uncontrolled, generic event, core clausal function) can be easily filled in by either a nominal or a verbal gerund construction. Other configurations at this level may not evoke such a generalization, however – think of single, controlled events in adverbial functions, which are predominantly expressed by verbal gerunds, or non-referential situations, which are much more common with (indefinite) nominal gerunds. In such cases, nominal and verbal gerunds inherit from different abstract schemas, viz. those of *-ing* clauses and deverbal nominalizations respectively.

Importantly, then, this model acknowledges that nominal and verbal gerunds have areas of functional overlap where they may engage in variation, without going as far as suggesting that they form a “gerund alternation”. This becomes even more apparent when we take into account the concrete token-level realizations of the nominal and verbal gerund construction. As opposed to most other cases of morphosyntactic variation that have been researched within the framework of Construction Grammar, the directionality of variation between nominal and verbal gerunds is heavily biased towards the latter gerund type.

Not only is the verbal gerund syntactically more flexible than the nominal gerund, it also does not experience any blocking effects from other nominalization strategies. As demonstrated through collostructional analysis, these lexicogrammatical and paradigmatic constraints tend to supersede the semantic ones identified at macro-level.

Even though the present study specifically focused on the functioning of gerund constructions, it also has a number of broader, theoretical implications. Firstly, it has shown that it can be interesting and worthwhile to extend the study of grammatical variation to constructions that do not fit the classic “alternation pattern”. Nominal and verbal gerunds do not engage in systematic variation, nor can they be considered as “two constructions with the same apparent syntactic function” (Stefanowitsch 2003: 413). Still, the preceding analyses provided us with new insights into the language user’s motivations to choose a particular construction. Secondly, while the analysis of grammatical variation at different levels of abstraction is not new, the lower-level analyses of gerund forms have shown that we also need to consider system-external forces such as competition and attraction from other constructions when modelling variation between two interrelated constructions. This is especially relevant in the case of nominal and verbal gerunds, which exhibit very different paradigmatic ties, but it can be argued that even clear cases of morphosyntactic variation between two alternants do not take place in a vacuum. Finally, the present study makes a case for incorporating the notion of directionality in models of grammatical variation. Although the existence of asymmetric relations between grammatical variants has been recognized (see, for instance, Cappelle 2006; Grafmiller and Röthlisberger 2015), it is not systematically examined when modelling variation between two or more constructions.

### 9.3 Pathways for future research

Part III of this study presented a number of methodological innovations to the study of Present-day English gerunds. Still, some other methodological advancements have not been incorporated yet. A particular technique that comes to mind is the use of mixed effects models (Speelman, Heylen and Geeraerts 2018), which combine fixed effects and random effects in a single regression model (Janda 2013: 23). Mixed effects models are typically used to control for the different preferences of individual language users in a data sample, but have also been adopted to account for the preferences of individual lexemes. As we know that there are indeed clear lexical preferences with nominal and verbal gerunds, such a model would allow us to more accurately detect the



effects of the independent variables. At the same time, and as noted above, individual variation in itself is worthy of further investigation, and should thus not automatically be controlled for (see, for instance, Fonteyn and Nini [2020] for a study of variation between nominal and verbal gerunds in Early and Late Modern English at the level of the individual).

Secondly, findings from corpus-based research on grammatical variation are increasingly complemented with experimental studies (see, e.g. Bencini and Goldberg 2000; Bresnan 2007; Perek 2012). The main benefit of experimental approaches is that they allow us to test to what extent our proposed account is cognitively sound. Grammaticality judgment tasks, for instance, would allow us to test whether the predicted outcomes by the regression model are similar to the choices made by native speakers, and thus whether “[the] predictors are (. . .) part of their syntactic knowledge of the constructions” (Perek 2015: 157; also see Bresnan 2007). Structural priming and sorting task experiments (Bencini and Goldberg 2000; Perek 2012), on the other hand, have been used to test the cognitive realism of abstract, alternation-based generalizations. In the case of gerunds, an experimental study would not only enable us to assess the cognitive validity of the various predictor variables, but also to test the assumption that speakers store a cross-constructional generalization over nominal and verbal gerunds in certain contexts, but not in others.

In this respect, additional corpus-based and experimental research could further zoom in on what we have identified as the locus of variation between nominal and verbal gerunds, viz. the expression of uncontrolled, atemporal situations. A closer examination of instances occurring in these contexts would shed more light on the conceptual differences between both gerund types, and the factors that influence the choice for a nominal or verbal gerund. One of the factors that has not been examined yet, for instance, is ease of processing. Following Rohdenburg’s (1996) complexity principle, we might expect that the structurally more explicit nominal gerund is less difficult to process. However, the same could hold for the verbal gerund: as the more frequent and thus more entrenched gerund type, it might not only be the default option from a production point of view, but also the most optimal construction for language comprehension.

Finally, additional insights can be gained from *zooming out* and considering the broader constructional network in which nominal and verbal gerunds are situated. While a number of studies have looked at the semantic (and more specifically aspectual) differences between different types of deverbal nominalizations, a quantitative, corpus-based perspective is lacking there as well. Moreover, the present study excluded a number of *-ing* forms, amongst which lexicalized forms such as *a feeling of grief* or *-ing* forms without objects as in *I love swimming*, but a more in-depth study of nominal *-ing* forms would benefit from taking these

into account as well. Following Fonteyn and van de Pol (2016), who looked at the Modern English *ing*-clause network, further research on the Present-day English use of the verbal gerund could focus on adverbial gerunds in particular, and compare its functioning to that of present-participial adverbial clauses. The present comparison of nominal and verbal gerunds, then, constitutes only a first step in uncovering the complex relations between the wide range of structures on the noun-verb gradient in Present-day English.

# Appendix

Head noun (NG)	freq >1	Head noun (VG)	freq >10	Predicate (NG)	freq >1	Predicate (VG)	freq >10
ban	7	way	417	require	36	consider	305
role	7	idea	275	allow	29	avoid	243
anniversary	6	process	243	involve	28	involve	221
effect	6	method	206	facilitate	26	try	195
evidence	6	approach	175	support	26	enjoy	144
result	6	chance	169	oversee	21	remember	144
story	6	importance	162	promote	15	recommend	135
concern	5	goal	147	encourage	14	love	125
criticism	5	cost	146	ban	13	suggest	120
question	5	hope	145	enable	13	imagine	118
approach	4	difficulty	127	improve	13	risk	110
call	4	interest	127	prevent	13	like	105
contribution	4	mean	124	see	13	require	87
issue	4	job	106	accelerate	12	propose	77
practice	4	strategy	105	follow	11	mind	76
skill	4	risk	103	announce	10	report	73
account	3	challenge	98	describe	10	support	55
challenge	3	effect	93	forbid	10	recall	48
need	3	possibility	92	prohibit	9	resist	46
occasion	3	purpose	92	address	8	help	37
problem	3	task	89	complete	8	favor	33
responsibility	3	practice	88	influence	8	oppose	29
site	3	benefit	80	order	8	deny	27
support	3	reason	76	justify	7	discuss	27
advice	2	year	66	protest	7	justify	27
aftermath	2	tool	64	witness	7	appreciate	26
alternative	2	habit	63	affect	6	fear	24
anger	2	success	63	celebrate	6	prefer	24
apology	2	act	62	criticize	6	entail	22
barrier	2	prospect	61	enhance	6	miss	20
belief	2	option	60	increase	6	regret	20
blame	2	responsibility	59	oppose	6	delay	19
book	2	experience	58	remember	6	describe	19
condition	2	dream	56	aid	5	advise	18
consequence	2	matter	56	avoid	5	hate	18
control	2	thought	56	condemn	5	contemplate	17
credit	2	problem	56	demand	5	advocate	16
decrease	2	step	55	discuss	5	envision	15
demand	2	intention	51	experience	5	admit	14

(continued)

Head noun (NG)	freq >1	Head noun (VG)	freq >10	Predicate (NG)	freq >1	Predicate (VG)	freq >10
difference	2	framework	51	handle	5	prevent	14
distinction	2	advantage	49	ignore	5	emphasize	13
documentary	2	policy	47	permit	5	mention	13
emphasis	2	plan	46	recall	5	experience	11
end	2	system	45	supervise	5	forget	10
explanation	2	difference	41	cause	4		
film	2	model	40	chronicle	4		
framework	2	criteria	39	defend	4		
history	2	basis	39	ensure	4		
implication	2	history	38	halt	4		
importance	2	commitment	37	imagine	4		
increase	2	danger	37	investigate	4		
inquiry	2	potential	37	manage	4		
instruction	2	procedure	36	mark	4		
involvement	2	focus	36	observe	4		
method	2	guide	35	provide	4		
model	2	work	34	regulate	4		
moratorium	2	likelihood	33	represent	4		
opportunity	2	choice	31	signal	4		
outrage	2	technique	30	abandon	3		
preparation	2	attempt	29	advocate	3		
process	2	promise	29	assess	3		
reason	2	impact	29	authorize	3		
recommendation	2	value	29	control	3		
regulation	2	concern	29	coordinate	3		
response	2	barrier	28	delay	3		
retaliation	2	business	28	eliminate	3		
revenge	2	fear	28	fund	3		
step	2	probability	28	impact	3		
struggle	2	progress	28	inhibit	3		
study	2	result	28	limit	3		
time	2	skill	27	link	3		
value	2	question	27	mention	3		
		emphasis	27	organize	3		
		advice	27	outlaw	3		
		issue	26	precede	3		
		consequence	26	recommend	3		
		aim	26	reject	3		
		rule	26	restrict	3		
		implication	25	undertake	3		
		guideline	25	watch	3		

(continued)

Head noun (NG)	freq >1	Head noun (VG)	freq >10	Predicate (NG)	freq >1	Predicate (VG)	freq >10
		credit	24	acknowledge	2		
		necessity	24	anticipate	2		
		notion	24	applaud	2		
		standard	24	appreciate	2		
		day	23	approach	2		
		suggestion	23	attempt	2		
		tradition	23	avenge	2		
		effort	22	confirm	2		
		delay	21	covering	2		
		pleasure	21	create	2		
		opportunity	21	demonstrate	2		
		wisdom	21	direct	2		
		concept	20	discourage	2		
		feasibility	20	drive	2		
		position	20	emphasize	2		
		trick	20	entail	2		
		vision	20	favor	2		
		art	19	govern	2		
		support	19	guide	2		
		argument	19	hasten	2		
		burden	19	hinder	2		
		attention	18	initiate	2		
		case	18	integrate	2		
		charge	18	like	2		
		example	18	minimize	2		
		joy	18	need	2		
		price	18	note	2		
		foundation	18	notice	2		
		resource	18	orchestrate	2		
		tip	18	outsource	2		
		rationale	17	plan	2		
		reputation	17	portray	2		
		aspect	15	practice	2		
		debate	15	preclude	2		
		information	15	prescribe	2		
		mechanism	15	produce	2		
		obstacle	15	propose	2		
		recommendation	15	question	2		
		service	15	recognize	2		
		decade	14	record	2		
		mission	14	reduce	2		

(continued)

Head noun (NG)	freq >1	Head noun (VG)	freq >10	Predicate (NG)	freq >1	Predicate (VG)	freq >10
		mistake	14	report	2		
		record	14	review	2		
		reward	14	show	2		
		time	14	study	2		
		week	14	suggest	2		
		form	13	trigger	2		
		honor	13	trumpet	2		
		insistence	13	value	2		
		motivation	13	verify	2		
		principle	13				
		privilege	13				
		role	13				
		vehicle	13				
		alternative	12				
		discussion	12				
		justification	12				
		master	12				
		methodology	12				
		pain	12				
		solution	12				
		balance	11				
		protocol	11				
		requirement	11				
		talent	11				
		agreement	10				
		algorithm	10				
		ban	10				
		confidence	10				
		factor	10				
		measure	10				
		objective	10				
		power	10				
		secret	10				
		tactic	10				

*Table (i) Raw frequency list of head nouns and predicates found with nominal and verbal gerunds in Chapter 7.*

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